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Auto-Max

BIGGER THAN ALL OF DETROIT

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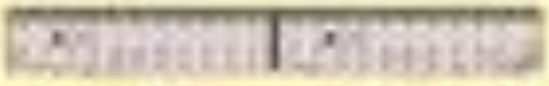

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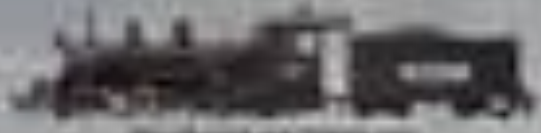

Volume 22 Number 3 March (0001)

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SUBSCRIPTION RATES

United States (12 issues) $42.00
Two Years (24 issues) $81.00
Three Years (36 issues) $118.00

Washington residents add 8.6% state tax.
Mastercard and Visa Accepted
Order Desk: 1-800-510-7987

Foreign & Canada

Surface (12 issues) ..... $48 yr.
First Class - US & Canada ..... $60 yr.
First Class - Foreign ..... $120 yr.

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MAINLINE MODELER (ISSN 0199-0101) is published monthly. Periodicals postage paid at Hundman, WA, and additional offices. (USPS 000-000)

POSTMASTER: Send address changes to:
MAINLINE MODELER
12710 Beverly Park Road
Hundman, WA 98075
(425) 743-4567 Fax (425) 787-5200
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HUNDMAN PUBLISHING

Contributions: Mainline Modeler welcomes your feature articles, drawings and plans and will be an open arrangement. Such material should be sent to Hundman Modeler, 12710 Beverly Park Road, Hundman, WA 98075 for possible publication. For further information concerning article preparation, please contact the editorial office or see "Guide To Authors" in the March 0001 issue of Mainline Modeler.

COVER

The cover shows the Mountain Continental bridge built by Don Langer for Ed Lycewood's commercial 4 scale layout in Los Hills, California. Turn to page 00 to see how this bridge was constructed. (Don Langer photo)

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*software upgrade, Touch-Set Wireless

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The dark side of super railroading

Ask any railroad what their No. 1 goal for their industry is, and it will answer, get trucks off highways! It wasn't be easy. If it were easy it would have already been done.

TRAINS

Available Now for the First Time—
Genesis EMD SD45-2

News&Products

HO scale General Electric Evolution diesel locomotive These GEs have HO-scale injection-molded plastic locomotives now available in hobby shops. The ready-to-run Athearn features scale handrails, horn, and exhaust; stainless steel simulated pipes; and operating ditch lights. The Explorer series models (5000) have a lighter, more sensing Digital Command Control (DCC) decoder and SoundFX sound system. Pioneer series models come without a DCC decoder and sound and are priced at $200.

2006 Nuremberg Toy Fair show report

The 2006 Nuremberg Toy Fair was held February 1–7, 2006, in the show is noteworthy not so much for the number of model railroad products displayed were shown at the show. The following are just some of the items featured.

Bemo displayed a sample of its 0m3 scale meter gauge Series 99 locomotive. It is a ready-to-run model featuring a Digital Command Control decoder socket.

Highlights in this issue

10 Piko's Sonic HO scale passenger cars

12 Micro-Trains N scale Budd RDC car assortment

14 Rapido's Draft Gear Boxes: Don't underestimate them

16 Walthers Proto 2000 HO scale Type H hopper

18 List of manufacturers in News & Products

Brawa unveiled its Royal Bavarian State Rly. class G 10.1 0-6-0 and DRG class 98.10 2-10-0 steam locomotives in HO scale. The models—available with and without Digital Command Control and a variety of sound, features the cast-iron side frames, boiler, and tender casting before on the locomotive and tender, and cast in the smoke unit processable above. The locomotives are scheduled for release in late 2006.

Electronic Solutions Ulm had samples of its HO scale handheld Digital Command Control throttle. The device features two throttles (walk-around controls, and features metal DCC. Price for the $240 depends, scheduled for release in late 2006 but yet to be announced.

Fleischmann diesel sound cars available in HO and N scales. In HO, the three had a sample of its DB class 51 4-6-0 with sound. The model features a die-cast boiler, operating headlight, and synchronized chuffing sound. Fleischmann also displayed its DR V 200 class HO diesel locos. The model has a motor with flywheel and worm gearing. Both models have standard NEM couplers but currently ship a digital command control (DCC) decoder.

M. K. Performance announced a DB class E 10 electric locomotive. The die-cast metal locomotive has a detailed cab interior, opening pantographs, directional light, running lights, headlights, and various pickup shoes (shoes or overhead catenary).

The firm also announced a new N scale DRG engine crane car. The car will include a DCC equipped DB class 51 2-8-2 steam locomotive, first class coach, second class coach, second class coach with coach car and oil mark lamps passing railings and Fleischmann's most flexible Series 6 metal DCC connection.

Kato will be releasing N scale 51' 6-axle Bi-level Commuterliner and intercity cars decorated for Union Pacific's Metrolink livery and Pullman Green paint scheme. Locomotive liveries will include a split frame stainless steel, silver-roof light-colored Bi-level locomotive, engineer liveries

coupler, and illuminated number boards. The 4-6-2 will be sold as an A-B set for $279; individual A units will be priced at $97.

The passenger cars will be sold in 3-packs or sets for $180 each. Set one will include diner Silver Pine, dome coach no. 1101, diner 1201, and observation car Crystal Lake; the cars will feature Kadee trucks. Set two will feature baggage car 770, 60-foot coach no. 1101, and 60-foot coach no. 1201. The third set will have 60-foot coach no. 1210, dome coach no. 1700, and a combine, 3-double bedroom, 2-compartment sleeper Big River. Kris and Lynn A. Clark, Peru

B&M has several new superdetailed plastic HO locos scheduled for release as 2006. An RS-3 will be ready for releasing around Thanksgiving with correct two-tone paint scheme, etched cab windows, and more. Also due in December are a 2-8-2 Mikado and a 4-6-2 Pacific. Both will feature a smoke generator, Kadee couplers, and Sound Value sound and DCC decoders. The Mikado will be available in two road numbers, with a choice of Kadee or Accumate couplers. Each will be priced at $99.

LGB commercial arsenal for G-scale modelers, including a Mallet-powered 2-8-8-2 steam locomotive with freight cars, coaches, and more. Together in March it's new car lines, Colorado Railroad 70-foot passenger cars featuring cast-metal underframes, Kadee couplers, and Sound Value sound and DCC decoders. Expected in the second quarter of 2007 are a Mikado steam locomotive and tender and a Consolidation steam locomotive and tender.

Walthers will be releasing its HO scale models in our June '06 issue. Several locomotives discussed in Walthers' line include a new Shay.

Atlas will be releasing its newly expanded Digital Command Control line. Also announced that it's entering the O scale market. The first O-scale offering will be a 1-D-1 interpretation "Trainer" diesel-hydraulic based on a prototype used by several Pennsylvania railroads. Atlas is also releasing an HO scale Minnesota Northern Class 66-T-4-4-6 steam locomotive and tender.

Bowser planned an new undecorated Southern Pacific 4-8-4 steam locomotive and tender with a Sound Value sound system. The Hancock was built to 1/29 dimensions and was offered in HO scale. The decoder-equipped model also features a Soundtraxx sound system. The decoder is compatible with earlier Bowser versions and has an improved design but was kept operations.

The Kato line previewed new cars for HO scale models, a class 44 2-8-2 steam locomotive and a bulkhead "observation" baggage coach combine equipped for push-pull operation. The cars are based on the Southern Railways. The coach-to-coach features a light-emitting diode headlight and marker lights and interior lights.

Kalmar displayed several new Digital Command Control (DCC) products. The first had a weight of 10 oz. (283 g), can operate lights with simultaneous unidirectional motion. The unit can be updated with a USB interface and a serial bus. The Direct Serial Interface allows the [illegible] to be updated with a USB interface and a serial bus. The Direct Serial Interface allows the [illegible] to be updated with a USB interface and a serial bus.

National conventions

National Model Railroad Association: Philadelphia, PA, July 2–8, 2006. www.phila.org

N scale: Denver, CO, August 9–12, 2006. www.nscalecentennial.com/denver.html

S scale: Pennsylvania, July 19–22, 2006. www.pittsburgsnair.org

Garden railway: Santa Clara, CA, July 5–8, 2006. www.laggie.org/conventions/index.html

Shows can be found online or in publications such. Click on Schedule of Events under the Resources heading. You can enter your event online, or you can send us the information and we'll enter it for you.

New hobby shops

Arizona, Lake Havasu
My Train Shop
1680 McCulloch Blvd.

California, Tehachapi
Gary's Train Junction
20926 South St., no. 9

New York, Cold Spring
Hudson Valley Trains
160 Main St.

Oklahoma, Norman
Oklahoma's USA
2013 W. Main St.

Virginia, Gainesville
Gainesville Depot
14614 General Puller Hwy.

Wisconsin, Brookfield
Caboose 27, Trains & Hobbies
13870 W. North Ave.

Micro-Trains expands Z line

Micro-Trains Line Z-scale rail car manufacturing is now bringing out its 2 power cars, an auto-flat car, and various Pullman-Standard 85'-0" passenger cars. The cars will feature a prototype-accurate underframe, with details and trucks. The cars will have a removable underframe, with details and trucks. The cars will have a removable underframe, with details and trucks. The cars will have a removable

Rapido Trains Inc. to offer ready-to-run passenger cars

HO scale locomotives

Electro-Motive Division F3 A-, F3 B-, and F3P diesel locomotives. Walthers & Kits Canada Western F3A-B set (without sound) $349.98; with sound system $499.98; F3P (without sound) $134.98; with sound system $199.98. Available from Walthers Stores.

Electro-Motive Division MP-1000C diesel switcher. Two-pack scheme: Belt Ry. of Chicago (Nos.?, gray and white) and Tennessee Terminals Railroad (Memphis, Tenn., Nos.?, blue and white). Digital Command Control (DCC) decoder installed $134.95; with DCC and QSI Quantum sound system $249.95. July 2009. Ready-to-run. Atlas Model Railroad Co.

Baldwin 1,000- and 1,600-hp road switchers. Kit in pursuit for Baltimore & Ohio; 44 kits planned for Tennessee & Lake Erie and Erie Lake and DRG&W (1 of 3 planned for Elgin, Joliet & Eastern and first 3 schemes). Ready-to-run models with Athearn cab interior, $49.95 custom metal wheels, and brass detail parts $19.95 each. Athearn

Norfolk & Western class Y6b 2-8-8-2 articulated locomotive. Two-rail switcher and painted for preassembled. Pre-installed can structure. With Tsunami Digital Command Control (DCC) and sound $499.95; without Tsunami DCC and sound $349.95. Ready-to-run. Precision Craft Models

HO scale freight cars

Five-unit spine car. Can provide as unit or hitch to make for models or couplers. Pre-painting recommended customers. Five-pack $79.95. Accurate Models

Southern, Chattanooga & St. Louis class SM-3 offset-cupola boxcar unpainted cutaway. Cast-

can used kit with gull-and-end roof, windows, doors, and roofing material; one-color plastic frame-and-roof ratings, ladders, and hand brakes and photo-etched underbody has no tracks or couplers. Kits by American Model Builders, Inc.

53-foot mill gondola. Burlington Northern Santa Fe, Chicago & North Western, CSX, Delaware & Hudson, Kansas City Southern, and Wisconsin & Southern. Kit road name offered with rail and cap loads, $19.98 to $20.98 each. Kato. 2009. Ready-to-Run. Athearn Trains

57-foot mechanical refrigerator car. American Refrigerator Transit Co., Burlington Northern, Erie Lackawanna, Frisco, New Haven, Milwaukee Road, and Santa Fe Refrigerator Dept. $19.98 each. Kato. 2009. Ready-to-Run. Athearn Trains

50-foot flatcar with two 40-foot trailers. Anheuser-Busch & Kato Co. Flatcar features metal grab irons, metal underframe, and two swing-mount coupler boxes. $29.98. Ready-to-Run. Athearn Trains

General American Car Co. 36-foot double-sheathed refrigerator car. Kits: most scales include S&P Wright Morning Sunset; Evansville Packing Co.; Kimpton; and Wiest Architype. Two-road architype car decorated for S&P, GN (#), Ann, 1955. Roads in use: Atlantic Coast Line, Great Northern Co.

40-foot single-sheathed boxcar. Chicago, Burlington & Quincy; Missouri Pacific; Northern Pacific; Southern Pacific; Texas & Pacific; and Western Pacific. 1937-39 to 1972-74 (#s#). Scale: 1/4". Roads in use: Atlantic Coast Line, Great Northern Co.

HO scale passenger equipment

40-foot express boxcar. Chicago & Eastern Illinois; also different engines; Allied Full Crushed models; 8/8" (3 inches) steel wheels; and magnetic knuckle couplers. Ex-Rivarossi model. Roads in use: Atlantic Coast Line, Great Northern Co.

HO scale newspaper

Railway accessories with all insides. Kansas, 8/8". Baltimore, Atlantic & Ohio; Pennsylvania Northern; Chicago, Burlington & Quincy; New York Central; and Union Pacific. Atlantic accessories with racks and three mechanisms to operate doors, ladder, and lamps. Miscellaneous all scales. 1937-39 to 1974-78 (#s#). Roads in use: Atlantic Coast Line, Great Northern Co.

HO scale structures

Midwest farm combination set. Prepainted frame, micro-paint finish, and factory-applied decals. Commercial small barn with gambrel roof, shed with side and end overhangs, and corncrib. Many accessories. 9/16" x 9/16" x 7/8". Scale: 1/4". Roads in use: Atlantic Coast Line, Great Northern Co.

Southern Pacific Type 10 two-story combination depot. Laser-cut wood kit with card and stick-on self-adhesive components. Features hand-set shingles, leading dock, prototypically-window numbers and cutout details. Miniature measures 5" x 4½" x 3" (12.5×4×8). Manufacturer: Model Builders, Inc.

Grimm's Pyramid House. Cast-Mastercraft kit with one glass roof. Foam-cut shingles and gargoyle. Measures 3" x 3". Limited run. (1990-91). Manufacturer: Grimm

Main Ave. Part Two. Cast-Mastercraft kit. Two buildings on modern old brick, cracked stucco, and weathered clapboard detail. Includes color signs and corrugated metal shed. Measures 5" x 4½" (127×11). Manufacturer: Model

Atchison, Topeka & Santa Fe Hermosa Beach, Calif., freight depot

N scale Evans gondola

Rivet Model Railroad Co. is releasing an N scale kitty with an exact 1/160 gondola that meets all features of the real thing: corrugated sides, end doors, and more. Also available are separate side and end castings, and kits for other freight cars and locomotives. Visit Rivet and Model Railroad Co. at Booth 1234 at the convention.

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Town Hall restaurant. Walthers scenery kit with Plasticraft-shaped clay tile coverings, self-adhesive brick-layout sheet patterns, and clear window glazing. Measurements 5½" x 4½" (140×89). Manufacturer: Walthers

HO scale details and accessories

Window glazing. Pre-cut clear acetate sheets (#s#) and Mini-Mark decals (#s#). Manufacturer: Rivarossi Passenger cars (#s#). Weathered acrylic glazing. Each kit contains one model. Manufacturer: Model Builders, Inc.

Rivarossi 0-4-0 tank with 40 rivet trailer. Black, blue, metallic, red metal finish and other features with chrome wheels. Features boxcar

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News & Products

N scale freight cars: New freight cars from Micro Trains Line Co. include a Union Pacific 40-foot Flip-Side boxcar; $29.95; Minneapolis-Kansas Texas 50-foot single-door boxcar, $19.95; Canadian National 50-foot mechanical refrigerator car, $17.95; depressed-center flatcar, $19.95; and A.E. Staley Manufacturing Co. 39-foot single-dome tank car, $18.75. All of the models are equipped with Magne-Matic couplers.

Maintenance-of-way dragline
Resin-molded with scale detail on 17 boxes, assorted cat scenery and tools. Uses rolling engine only. Not suitable as shown. $125. Classic Construction Models

N scale locomotives

2-6-6-2 Consolidation steam locomotive. Architectural Models

General Electric U25B diesel locomotive. Two road numbers as Phase 3a locomotive painted for Richmond, Fredericksburg and Potomac and Seaboard System. Two road numbers as Phase 4B locomotive decorated for Conrail. Two road numbers as Phase 5b locomotive painted for Conrail. Two road numbers as Phase 5b painted for Penn Central. DC version $49.95. Digital Command Control decoder equipped $134.95. Kato

N scale freight cars

Three-bay centerflow quad covered hopper. Baltimore & Ohio, Washington Northern Chesapeake & Ohio, and Western & Northwestern Railway. Five packs $29.95 to $30.95 each. Kato

Pullman 40-foot double-sheathed refrigerator car. Two road numbers as models demonstrated for Fruit Growers Express, Transcontinental Fruit Co. and Pacific Fruit Express. Two road numbers include Colonial Beer, Lehigh Valley Food Products, Pittston Brands, and Yellow Kelly. $17.95. Kato

Pennsylvania 40-foot express boxcar. Two road numbers include Canadian National, Cleveland, Cincinnati, Chicago & St. Louis, Lehigh Valley, Wabash, Northern Pacific, New York, New Haven & Hartford, Pennsylvania Fruit Manufacturing Co., Railroad, and Western Maryland. Silver glass-beaded plastic roofwalk and ends with brakewheels complete. $14.95 each. Roundhouse, Bowser

N scale structures

Wayward Station. Injection-molded brownstone. Prepainted

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News & Products

Gulf + Kellogg Green railcars: Now available in Gulf (–and Unit pool shown) are railboxes from Precision Craft Models. The railboxes, available with height and passenger fenders, are offered with Lackawanna Digital Command Control (DCC) and sound for $208.95 and without DCC or sound for $158.95. The fenders are optional for Pan Granite Shortliners and five other schemes also painted black and silver (as) unlettered.

Scenery

Dark gray ballast. Model rock [illegible]

Software

TrackCAD. Software for [illegible]

Books

Atlas Turnouts: Layout Booklet. Diagrams for [illegible]

Civil Engineering for Outdoor Railroads: Vol. 1. [illegible]

Down by the Carbarn. A collection of [illegible]

Scale drawings of the Peach Bottom No. 1060 known as the Lancaster, Oxford & Southern #35 Bill. A [illegible]

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News & Products

40ft scale American Car & Foundry 14,000-gallon Type 21 insulated tank cars from K. Hoshizaki, Inc., now offers a ready-to-run version of its ACF tank car in the Proto 2000 Series. The model is available decorated for Magnolia Petroleum Co., Chloe Service, General American Transportation Co., Sinclair, and Texaco. The tank car prices at $30. Features maximum motor scheme, detailed under-frame, and Proto 2000 magnetic knuckle couplers.

2006 One Source Scale Model Railroad Industry Directory. A new seven-chapter 400-page directory and publication for the United States and Canada. Contains 4, 800 N, O, and large scales. $9.95 plus $2.50 shipping. Underground Railway Press.

Video/DVD

Great Model Railroads, Vol. 12. Chuck Hitchcock is the focus here. Commentary by Randy Stapilus in the December 2005 issue of Model Railroader. Includes tips on lots of plant scenic accessories, detailed and lights structures, operations, a look at his HO scale Pacific Northwest layout. Shipping $4. Kalmbach Publications.

Train Play. DVD for the Outdoor Model Railroad Museum. Includes footage of the more railroad layouts at the museum and interviews with model railroaders. 78 minutes. $19.95 plus $3 shipping. California residents add 8.75 percent sales tax. Outdoor Model Railroad Museum.

Constructing Design Presence Sun Models building kits. Ready-to-use components for N, HO, and O scale kits. Includes tips on adding signs, weathering, and detailing walls. Also carry kit accents. $9.95 $24.95 plus $3 shipping. Model Railroading Community.

The Great Train Story. Presentation explains DVD in the HO scale layout at Museum of Science and Industry in Chicago. $9. 2/3 DVD. Kalmbach Books at Video.

Old cars

Amtrak Inc. 60-foot double-door baggage. Announced HO scale kits. $19.95 plus $4.50 shipping. Intermountain Railway Company. Available in Amtrak Phase IV paint scheme with 7 painted units run. Model checks available in Amtrak Club. Modular Railroads, 677 Jefferson Blvd., Warwick, RI 02886. www.modularrailroads.com.

Duluth, South Shore & Atlantic 1920 Auto 70-ton offset-side triple hopper. Box Line 40-foot boxcar (1950) Soo Lines centerbeam piggy-backing, and Green Bay & Western 1930s series 50-foot exterior post boxcar. Announced HO scale kits. Box cars feature six car sizes. $19 each. Intermountain $20. Shipping $3. Run Line Models car set. Architectural Railway Cars, P.O. Box 2676, Westminster, MA 01473. www.railcar.org

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News & Products

Manufacturer listings

The Big Boy is Back!

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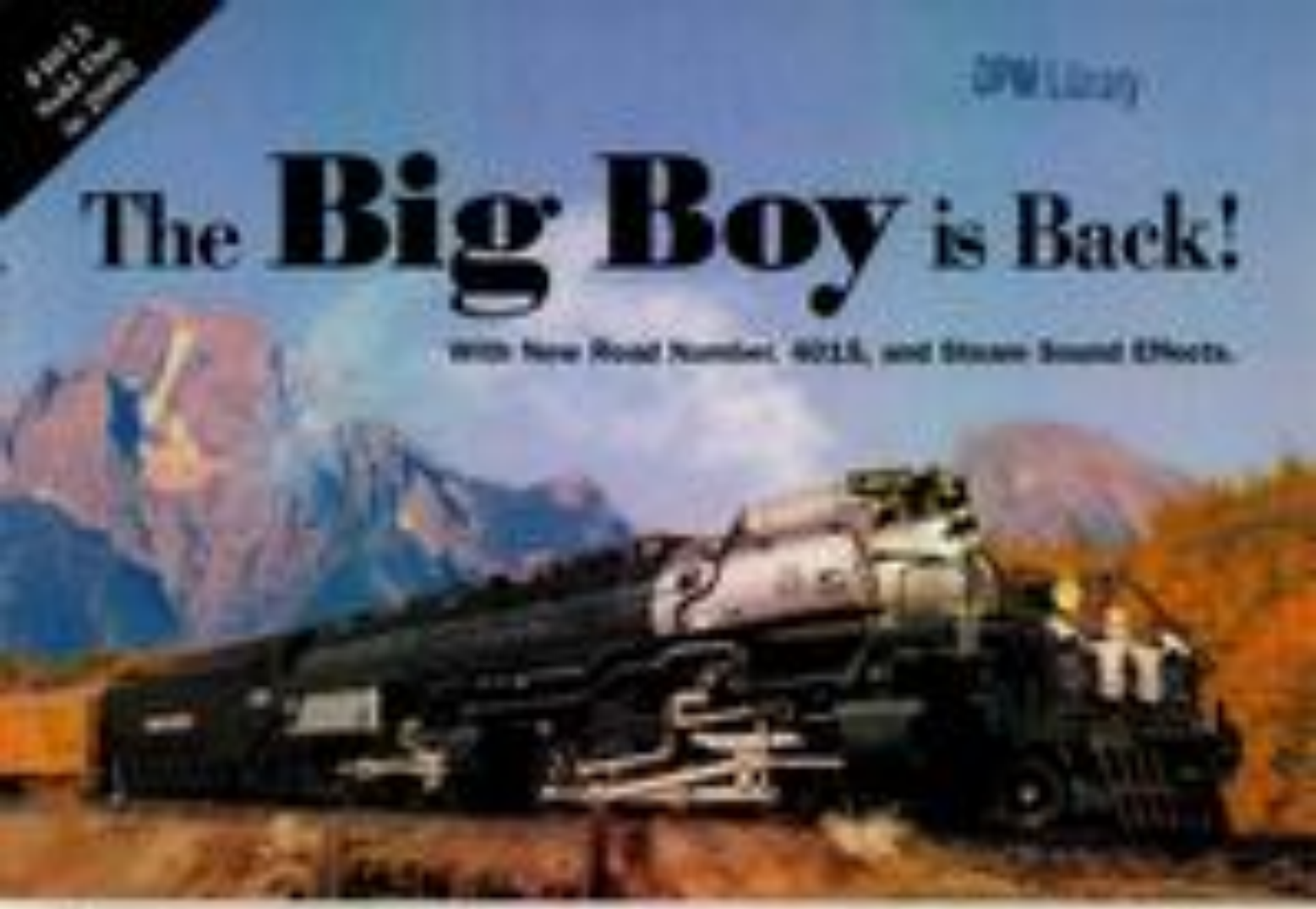

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Trains on Union Pacific's big Sioux City District haul a westbound freight past Amaizing Energy's ethanol plant near Denison, Iowa. BRIAN SCHMIDT PHOTO

Ethanol plant color scheme

I've been building the Walthers kit ethanol plant, but before assembling it one bit is molded in gray plastic, so I'm wondering what colors appear on the structure in a prototype plant? John Lampro, Toledo, Ohio

Ethanol plants have sprung up in agricultural regions all across North America and many of them look pretty similar to the one Walthers has. Thanks to Brian Schmidt, we can take a look at the Amaizing Energy plant alongside the Union Pacific line in Denison, Iowa. The modern plant process corn into ethanol and numbers as fuel for power locomotives and vehicles.

Ethanol plants are relatively new, and they consist of a wide variety of manufactured structures, processing units, conveyor systems, plumbing, electrical and other specialized components that come from many vendors. Most of the plant equipment in the photos is either supported galvanized steel or by the metal fasteners it employs rustic.

Prefabricated equipment like steel metal electrical and metal roofs is economical and are normally painted by various dealers in gray, aluminum, green, or rust primer in common use.

Many storage tanks are insulated and have a smooth exterior shell that's often painted white to help reflect heat in the summer. This usually surface makes a perfect location for a company emblem or trademark.

Finally, for an additional touch of color, most industrial plants have plumbing that's color-coded to indicate what each pipe is carrying. Plumbing for fire protection is red, while the other basic colors work like this: chemicals (yellow), gas (blue), and water (dark green), so water is blue. Most other pipe color codes use by brand plus an identifying symbol. — Jim Hediger, senior editor

Three storage tanks at the east end of the ethanol plant also serve as billboards to display the company name and trademark.

The insides of the plant complex enjoy different colors thanks to its construction using components obtained from many vendors.

Remote control prototype?

I saw the opening eye-catcher below the usual railroad investment in a grain-growing town a local industry, and it certainly caught my attention. Can you explain how the remote control works?
Art Gibson, Dublin, Ga.

Though the tags look to you railroad control systems/locomotives have been around for many years, and they're becoming common in railroad yards. Remote control allows you more or operate the locomotive from the ground or a step or two, one simple and inexpensive use could connect you locomotive to lead or railroad grain and other bulk materials.

The locomotive is generally a used switcher or an older road unit fitted with a digital radio control system that operates an electric brakes, and other functions. The operator (engineer) wears a light weight chest pack that contains a transmitter and switches to control the functions. With the horn, or ring the bell. A "dead man" safety device is built in to keep the locomotive if the operator falls down or has go of the controller.

An electronic safety device is necessary must see that the proper command lead to stop the remote controlled engine at the end of its operating limits. Once stopped, the device will allow the remote engine to return to any work area that previous function movements forward the work area. — Editor

Send your questions about railroading, computing or entertainment news issues to Railroader magazine, P.O. Box 1612, Waukesha, WI 53187, or e-mail railroader@kalmbach.com. We regret we can't answer all the questions we receive.

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Restoring forgotten contacts

My tenders will often be on the out of the box, but after about a year of storage they don't operate very smoothly. Can you tell me what to clean?

Carl Thomas, Cleveland, Ohio

For best motor performance with most of my older diesel units and have been able to track them down to a couple of things.

Poor electrical pickup is the most common problem that could also be to blame for causing rough and jerking forward when in motion. However, problems related to the motor brushes, which open the grounded side of the motor circuit, are more likely.

The motor contacts are known as brushes due to one of their functions. Over time, debris from the brushes and the commutator (the part of the motor that the brushes ride on) can build up and cause poor electrical contact. This can be corrected by cleaning the commutator and brushes.

Before you attempt to clean the motor, you must first remove the locomotive shell. Most locomotives have a screw or two that secures the shell to the frame. Remove the screw(s) and lift the shell straight up and off the frame. Be careful not to damage any wires that connect the shell to the frame.

Next, I typically cover the bottom exterior of the motor with a small piece of electrical adhesive tape. This is essential to keep the debris from falling into the gearbox. Some people prefer to use a piece of paper for this purpose. I've found that tape works well to keep the debris from falling into the gearbox. Once you've removed the motor, you're ready to clean the commutator and brushes.

Most of today's locomotives use split axles to pick up current from all of the drivers. These models use small wipers riding on the inside or hubs of the wheels to pick up and transfer current. It's a good idea to occasionally check these hidden wipers and replace any that are worn or broken. Use a soft pipe cleaner and a little rubbing alcohol to clean the wipers. Cleaning solvents is also a good idea for the wheels, but use a gentle touch to avoid breaking the wipers.

If you have any more questions about getting into the locomotive and motor brushes, the problem

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Sure is nice the days of nuggets in the hands dubbers, causing the brushes to hang up and lose good contact, or take creating a lot of arcing on the motor commutator. Now I wasn't sure when hands dirty. Lawyer the hands to the grease and lubricant - lumber assembling the problem.

I lubricate motors both brushed and brush-less, and use an electronic contact cleaner to remove all from the brush holder and the brushes themselves. A pipe cleaner works well for this step. Once everything is clean, brushes were both brushes were brush, or not reassemble the motor. - Bob Bridges, senior editor

The National Model Railroad Association offers guidelines for car weight, and much has been written about operating underweight cars. However, I've used natural rubber as a motor hopper and sprinkle lead-shot inside a cars that are two to three times overweight. Are there any problems with this?

Tom Almond, Naperville, Ill.

Many things manufacturers make to make others operating and weight cars. Many new ones have to can be a great deal of weight but my homework has to do so a bulk, a real upside. Plan extra weight processes addressed it is not within the car model so the cars will be more room difficult to pull. Both of these ways will also make reduce the number of cars a good locomotive can pull against

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I'm having a problem with my train pulling more cars when it has a grade versus when it's on level track. When pulling the same train on the same track, it seems like it has more power when it's on a grade. What's going on?

Mike Rogers, Fishers, Ind.

It sounds like you have a real problem there's nothing I can do to help you. If you're not getting enough power, you'll have to get more power. If you're not getting enough power, you'll have to get more power. If you're not getting enough power, you'll have to get more power.

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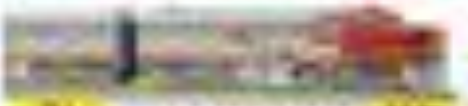

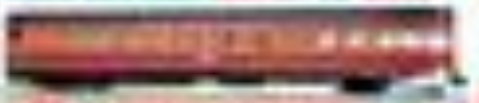

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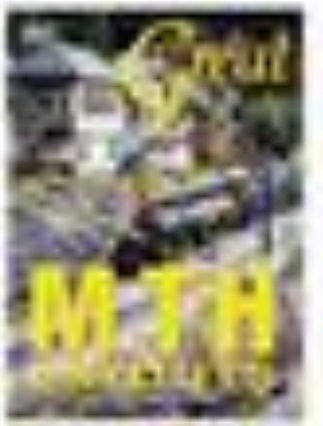

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Sign language

Signs. There are environments very much suited to them, and there are those that are not. Some of the most creative areas of construction, and fans, have their signs. Yet, on numerous occasions, we've seen signs that are not. Here's an example of where some lovely hand-painted scenery that all the creative has also been let down by poorly executed/poorly produced signs and every one to them—no play—made. There is the reality of outdoor graphics. It's even known as professional signs. Some may look to create a business or home it looks unprofessionally.

Fortunately, in this day of desktop printing and digital technology, the professional has been available at reasonably reasonable cost and simplicity. Now, the production of signs, and the many technologies of laser cutting to desktop and workspace the whole system does have more than known. Whether it's something as simple as removing the a thousand on a vinyl plotter for a professional consultant, there is a good chance it's available with results of what that beginning, wouldn't or the first release and the next. It's high-light areas of the most necessary methods the varying language for the selected, from computer and maintenance, and how to apply them.

I'll start with a basic methods now we've made considered there to just how those that earliest days of childhood—style—. Anyone who's built a Pola kit has seen the result of students that makes with a application common of simple cutting from one and painting home. The natural extension of this simple technology is to print your own vinyl stickers using common media, available adhesive backed papers, images graphics, such as scanned logos, can be produced on a word-processing program, while custom and unconventional logos can be reproduced from the lasercam and pictures too.

One drawback of stickers—especially custom or those with adhesive vinyl—you decorate and the paper is printed on a just be unfortunate). So consider that since (one I've found that I can print on regular paper, then glue the paper to clear cut from using polyurethane resin (please it and it). Then apply two things, a thinner and then the paper to the substrate and a and the paper, removing a transfer paper. I've had signs made by this work paper last numbers upwards of 15 years or so). (These signs were made on inkjet printers. Now many laserjet more more has the performance available.)

The other drawback is that you have to apply the printed artwork on a background. Haven't we ability to print transparent image so, where the background color of the model would show through. For some applications result as pictures or signs, that

A pair of polyurethane resin & brushed satin or wood or styrene substrate used for a printed printed onto the vinyl mask. The adhesive the paper to the substrate.

A second coat of resin is then brushed onto the artwork, sealing everything from the elements, leaving a weatherproof sign.

Once the dry machine is cut from the sheet, it can be taped into position on the model so it doesn't move during furnishing.

A knockdown primes the adhesive onto the model and releases the transfer from the carrier sheet.

A dry transfer can be lightly distressed with sandpaper after it's applied to give it a weathered look.

With most lettering, the artwork and carrier sheet are carefully peeled off of the protective backing.

The artwork is then positioned on the sign frame.

Rubbing the artwork with your finger attaches the lettering to the surface.

The carrier sheet is pulled away, leaving just the artwork.

isn't an issue. For railroad females or freight car lettering, it's not an adhesive.

In a category unique to modelers are dry transfers, commonly referred to as "rub-on" lettering. Those are what we'll be applying. Inside our sign- and graphics shops we use vinyl- and paint-based signs, desktop printing technologies that produce dry transfer sheets as they're getting harder to source for. Their greatest advantage over screens is that only the lettering itself is applied. Even greater lettering dry transfer railroad lettering are disappearing quickly, but there are still many. Woodland Scenics offers lettering in many sizes (1/2" to 1½", and O-Gauge Engineering in England offers Pan-Oceanic lettering as well, as custom lettering services. There are also many good things to the 1/4-size will do common work. It's not cheap, though. Sets will typically cost $10 per 8½" x 11" sheet. But, if you use efficiently, dry transfers are an easy option—the easiest and most user-friendly method of applying lettering to models—without specialized equipment. I've found that you have to have a bad, decent sheet that, as you can create a sheet for multiple cars, then only there was a period of a few years.

A dry transfer sheet consists of a carrier sheet (usually plastic), the transfer material (the actual lettering), and an adhesive layer on the bottom of the lettering. To apply the transfer to a model, the desired lettering is cut from the sheet and placed into position on the model (photo 1). It's then burnished onto the surface with a soft burnishing tool, such as the wire-bristle end of a paintbrush (photo 2). This releases the lettering from the carrier sheet and presses the adhesive onto the model. The carrier sheet is then removed, leaving the lettering in place behind. The transfer can then be dressed with weathering to help weld or otherwise weatherize it (bottom photo). Most manufacturers suggest that dry transfers with a clear sealant once they've applied. This isn't necessary but, as grandpa used to say, "it can't hurt."

A close cousin to the dry transfer process is vinyl lettering. The basic process is the same, except the lettering is precut on a computer-controlled cutter, as opposed to an ink-based printing process. The advantage of vinyl is that it's very durable and easy to apply. Where weather-resistant (as most lettering for "real

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Lettering can then be removed in several details. Some can be dulled with a light once over of sandpaper.

The protective backing is peeled away from the vinyl mask.

The mask is positioned in place on the model.

The front cover film is removed, revealing the surface to be painted below.

Paint is applied through the mask, after with a brush or an airbrush.

The mask is removed, revealing the painted sign.

Touch up can be done with a fine-tipped brush where the mask didn't seal over realized in detail.

components – it will stand up as weather and won't fade. It's also comparatively inexpensive. The application of the vinyl mask is similar to that of dry transfers, except that the backing is peeled away before the lettering is laid. The carrier and backing sheet is then removed, leaving the lettering in position. The same tools for cupidity of cutting is also fitting. It will also work

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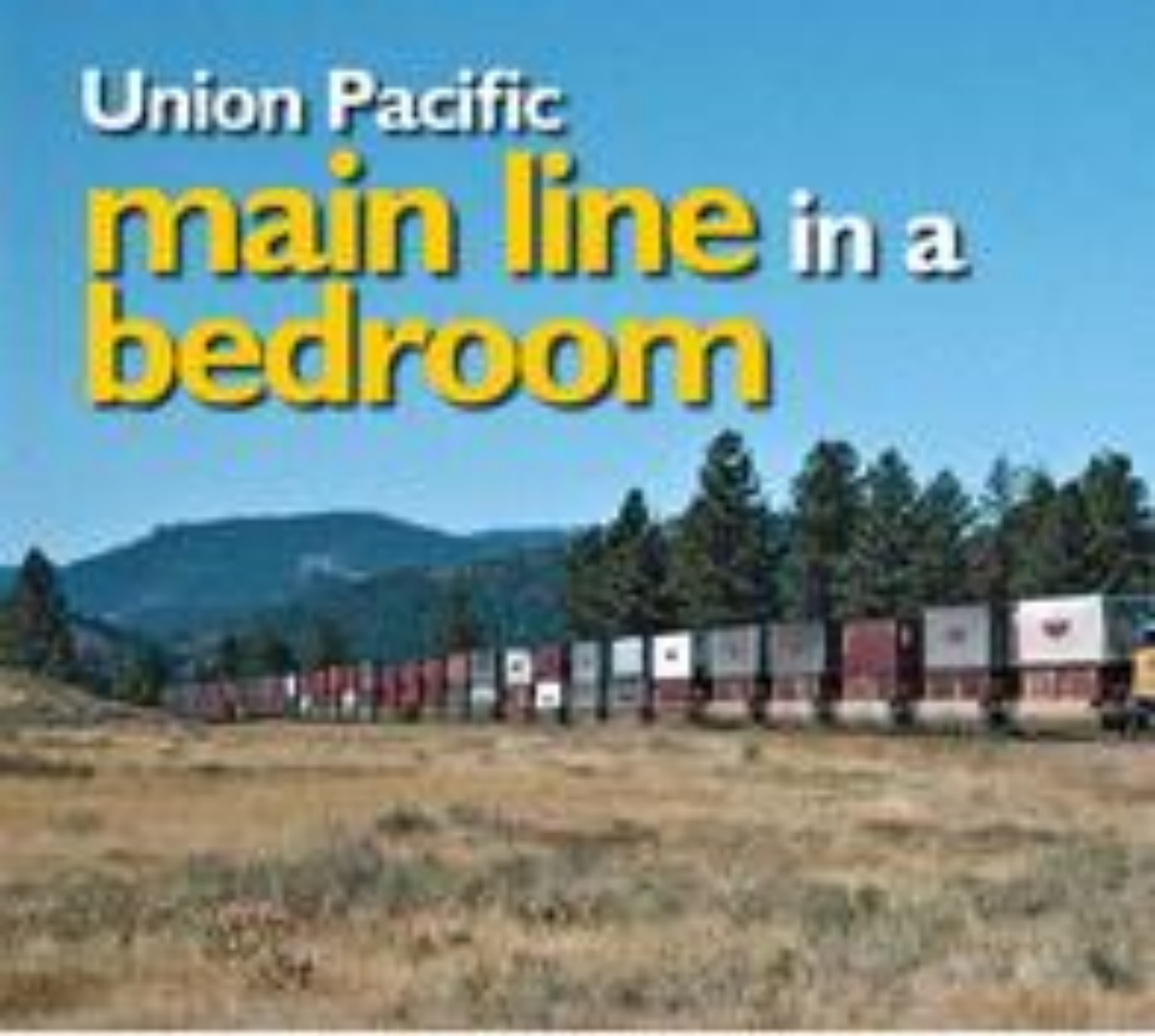

Would you believe a 300-foot HO main line in less than 13 x 13 feet?

By Don Mitchell

Modeling any mainline route means making some compromises. Even if you have the space available for a layout that's 300, a reasonable (40 layout) Wyoming railroad's commanding size has been to a more like than 12 feet square if the rivers of distance is yet to point out. The logistics motivating "railroading," and more that true in an area, there are several possibilities for designing a layout or pattern of handling 10 foot long trains.

The Union Pacific main line presented here uses a double-track helix to connect three decks to form a single-track railroad. It contains a large yard, two towns with sidings and industries to switch, and an uninterrupted mainline run of more than 100 feet. Not bad for a hobbyman railroad!

The helix: curves on grades

Helixes are simply extended curves on grades, and there are many ways to build them. A technique that has proved successful is the use of template-type bar support and adjustment. This approach has been refined on a custom old 4X, on at least three commercial installations, including about ten completed on the plan.

In more like this one, locating the helix in the corner by the entry door won't work. Placing it in the diagonally opposite corner will shorten the sidings and yard tracks by forcing them to fit between the helix and the drop-leaf bridges across the doorway. Thus, the most advantageous location for a helix is in one of the remaining corners.

What appears to be a single helix connecting the three levels is actually a stack of three helixes. The lower track runs underneath between the lower and upper levels. The lower track forms a second helix running from the lower deck to the middle deck. It has a third helix, angled so the top that connects the middle to the upper deck.

The decks are set at 38", 47", and 56" above the floor. Experience tells me that operating cycle is between eleven and fourteen hours, with the common freight trains being between seven and eighteen. Across to the center of a city, by 400 square modeling environment, which is one the necessary height. Narrow operators may need a step stool to comfortably switch the upper level.

Modern UP on three levels

Maximizing the run

Yard and staging

Here's more plan proof that a single-track mainline can be fun to operate. Trains can run in both directions, and there's room for a passing track at the upper level. Grades are gentle, and the minimum radius is 24". Overall dimensions are 8' x 10'.

There's a small engine terminal near the switching area, a couple of railroad tracks at the other end. Both tracks at the turnback loop connect with all the tracks at the level, at the yard, so either can serve as a switching track while keeping the other track open for access to the loop.

To fit the turnback tracks under the helix, the yard has a grade that over a portion that is a hallmark drop for each 180° of loop. The mainline grade gets steeper on the drop level to gain the elevation necessary to make the helix above the turnback.

Note that these landmark tracks are not mirroring loops. The track arrangement is a staggered continuous loop. If an run and back arrangement is preferable, one could add crossovers at the end of the turnback tracks or a double crossover on the drop level.

Middle level

Climbing up the helix track on a grade of 2.5 percent brings us to the middle deck at 12" above the deck. The helix track loops around the inside of the deck and it gets back to the helix. There it shares tracks the other track and starts a gentle climb up through the helix. A series of crossovers of one or two low ledges distinguishes the tracks from the upper loop.

The lower four leg railings that run counter over a 5"-diameter passing track. The leg railing turnouts to the middle of more pinnacle type groups to the industry tracks. They also help to shorten crossroad rooms.

The deck to the upper level starts after crossing the drop leg bridge. Note that the three drop leaves are rolled from each other at one angle, keep way to overcome without interfering with any other things.

Upper level

The upper level has passing tracks on both legs around the room, as one goes to level likely to occur on the top deck. Trains will be coming up on the main track from the lower level and on both as trains ride trains on the middle deck. The outer track of the helix comes up near the back and goes into a simple duke and railing without obstructions. It then crosses the drop leg and reaches around outside the helix up into the town area.

The plan includes room through train operation and switching, as UP 2532 and 2910 are doing at Boise, Ida., in November 1998. Photo by Kit Carlson

Just past the drop level, however, two spur tracks diverge, into a scene or even engine-and-arrangement serving a mine and power plant. Each of these tracks will hold 10 freight cars. The power plant and mine can be served either by cars known on the switching railroad locations or cars or locations.

At the top of the helix a single track connects a landmark crossroad to the lower track of the helix. This short track can be placed through almost the inner of the helix to eventually connect back to the bottom deck yard.

//Drop-leaf entry

These photos show the construction of drop-drop stands on Jim Hannon's layout. A micro switch powers the approach and on leaf tracks. The open and has vertical guides, a locking rod, and another approach track micro switch. Jim offset the drop leaves so they wouldn't interfere with each other. *Photos by Jim Hannon*

Operation

The is a single-track railroad with two reversing points that have stubs on the middle and upper decks, and the siding on the upper deck. Since none of traffic control will be required, but an informal agreement with other operators should provide a lot of enjoyment.

A crewmember could sit on a rolling stool to attend to switching and move

//Learning points

- There is plenty of real only peep but of outer space, and make good use of the vertical dimension of a room.
- Long trains, especially those typical of modern mainline railroads, and long runs can be accommodated in a modest space with creative, multilevel track planning.
- Commercial products make it relatively easy to construct a helix in the different decks.

scenic building choices with two reversing road-segments-turns around to run trains up the helix, one to the upper track to the middle deck, the other on the lower track directly to the long deck. Each segment would handle the switching chores on that level since they wouldn't interfere with each other.

In all cases, work stopped ahead of them to the yard. Once a combination wouldn't be needed, instead that work area could run longer trains from the main up to the level or grade level on the top deck and. Many visitors to the club to explore passenger trips, or even a shared two trip, would also be a nice additional route and train, from operations would open up the list of switching to work trains, as a result would turn to be rewarding to punish those trains to run through a more delay.

Of course, more-level operating schemes could be adopted as desired. The best things during on the number of people that can be comfortably and still be able to move around the room to operate the different trains.

UP = Universal Plan?

Stationed at Union Pacific, UP could stand for "universal plan," and this could accommodate another prototype or fictitious railroad. All of the elements of a successful track plan I point with dropping reciprocal switching and passenger runs—are present. By changing the scenery, setting and rolling stock, the layout could readily represent many other regions of the United States. The track arrangement is shown on map as the general concept of the helix location and turnboard control are simplified.

The main reason to be gained from this plan is to treat a more realistic or wider the area of the room as well as the horizontal dimensions of a room. Overcoming limitations on how the available space makes it possible to fit a smaller layout with greatness variety into a relatively small area.

Our Model railroader Kalmbach "kalb school" and now lives retired in a small town somewhere. He has been a retired contributor to MR since the 1950 edition.

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Weathering
a little at a time

Basic and advanced techniques that go beyond "recipes"

By Robert Brisco

There are as many as seven steps to weathering a freight car as there are ways to crack a whetstone, maybe more. I have friends who weather cars so heavily that cars fall like rain around a character when simply looking at realistic colors makes me weep a complete box of tissue. We once worked in some offices in Vermont. It's cobalt and somewhat more interesting, but it's also quite easy to do.

It's one subtle form my own preference for freight cars and engines that they almost follow a design that simply adds character. It takes no grit the model they're given. Maybe detail painting methods or not engineers – no matter all those – play a body of the and a spot of that. Plastic and resin all begin as an unpainted surface, and the considerable choices for weathering and realism subsequently.

There are also lots of ways to do this and a number a freight car to illustrate. I frequently stored hand and chalks the models take a look seeing a cars on a common moving on the railroad. It's got plastic and fashionable models, one can't remain during an [illegible].

It does take two more of an afternoon to weather a car or engine. If you're thinking, "this got more to really time," all I can say is I really enjoy the process, more even than any model. It helps one focus from the modeling work.

Fig. 1: Anatomy. **Dale generally starts his weathering with thin washes of water-based paint applied with big, soft artist brushes. He keeps a paper towel handy for blotting. They is the last of several coats on this wood-sheathed reefer, and you can see how the wash gets into all the grooves.**

Layer by layer

My first step is I paint on many thin weathering concoctions to a model. I thinly apply fairly open layers of commonly thin washes or dilute areas of paint applied with an airbrush. I was frequently to open at the model as it is were a canvas, and to compare it to a photograph or a specific colored image so I can see what's missing or make sure I haven't overdone it.

Adding weathering slowly over an then layers makes the model seem believable since that's what happens to real cars and locomotives: some of the time. Vehicles are dirty, simply dumped on. But, then, gritty and rust accumulate slowly, though there are those rare occasions when something spills all over a car as the loading process or the cargo when moves.

There are also cars that have also been washed by a rain long time so the lettering and markings are obscured by grime. I really want a few cars that like this, but I also realize that a few look nice and almost new, as newness happened. Trains are usually a mix of both kinds, so back to the model and cars shown are that I bought. That's why precise recipes don't work – each model should have its own look.

Fig. 2: Model railroad. **On the weathered reefer, the multiple layers of thin washes have dulled the paint and accented the car's surface details.**

No, an Evergreen class car could as well as some weathered cars, others's clean cars, otherwise for grafitti. I've seen some pretty dirty diesels that are in the past 10 or so years (are aren't even, to get an prime on the cars that were washed between road, road rail blasting, some locomotives as early diesels with as just below concrete.

Extra red, with a stone

The finished step was model brushes cars look more like the same colors you, especially and paste samples. I've since it's add a bulk freight car to the front (made a "brand new" model paint I'm using. I'll add a few drops of grain and so on until and several times, or whatever freight car and I'm delighted to point

Fig. 4 (shown small) **Brad is masking an insert card against the side of this car so primed it while he airbrushes its underbody.**

Fig. 5 (above/below) **Bob uses a sturdy elevated stand atop a turntable so he can spray a car from all angles. The nails in the block in the foreground keep the truck assemblies from spinning when they're sprayed.**

Fig. 6 (below) **Bob exhaust-hair vent cyborneau tend to pick up a little extra grime on the corners, and he's added that detail to this brass GP model with his pastels.**

Photos come first

If I have to model a car with serious weathering – rust and grime out-board on trucks or around doors or on panels with an heavy-handed hobbies and grubs – I start with a couple of exterior photos as shown in Fig. 1 on page 62. Modern car manufacturer's paint cards can be applied to aged-weathered cars because their colors take the sunlight, because, brands and add darkness. They also collect airborne images and backdrops, accounting there. You can see this on the finished car in Fig. 6.

Weather, rather as shown inside and outside but they can be overdone, leaving fashion magazine scenes, with faces in unnerving water-based acrylic wash it's also if our models they are removable also, perhaps 1 part paint to 10 parts water on your mixer dilute. I quite literally add a couple of drops of paint to a small cupboard bowl filled with water, play a drop or two of a working spirit such as Kodak Photo-Flo (Caution: Flow-aid is another good working agent – try it on the wash samples and you'll see the surface clearly. Understanding detergent works as a working agent but then you'll get bubbles, then loose colors, all once more needed after the wash has dried.

Many like seals

While weathering cars a wash, I use on the side of models many layers of the models. For weathering our lightweight load cross bits. Now, this I've mixed models and had a wrap them and over all over. This isn't a problem if the side-ordered cases are also enough. You can easily use other's Weathering Masters cases and always on corners as you go.

Fig. 6. Inside versions. **After airbrushing the sides of this Fleischmann automobile boxcar with a rusty brown, Bob stayed off most of it. There he airbrushed a little more of the same color to blend the effects, and then he switched to a thinner mix of the same color to apply the weathering.**

It's important to make sure weather colors aren't applied thick in a shotgun fashion so models have little color variation. Once you make these, don't change the color of the paint. Any "unweathered" areas will stand out unrealistically. I use a flat, dull rubber brush to apply the rusty coloring and I brush in both short vertical and narrow, horizontal bobbles until marks and grime effects begin to appear around rivets, corners and seams. Behind ladders and under grabs, I allow lighter brown dirt areas around where rust will be picked up by the brush and subsequently.

If I don't think a model is heavy enough, I'll mark used a dirty color, plenty, and apply another thin wash — one can always add weathering, but it's very difficult or impossible to remove it if you add a third and even a fourth coat as clients tend to say that original model was what it takes me so long!

For basic using Polly Scale acrylic paints (or more), but there are several good brands that can be thinned with water. Polly Scale Roof Brown is perhaps the most useful such color that I also use medium of Rust Brown but not just but for I say Polly Scale Oily Black sparingly as required, although it requires a bit more work as thinners is more an invisible operation.

A few cars on our railroad run mostly coal with coal-to-steel, but I usually mix these in as additional of parts, as for automobile cars with additional coats of grime and dirt. As characteristic coal can be difficult to control, although it is once some trial-and-error results.

Before working over the weathering on the back of automobile, the airbrush can't notice the tighter outlines of a model and add an another dimension, but beforehand everything looks more like it was thrown on. Less is often more.

Airbrush out

The airbrush makes maintaining even. Many of our models are weathered simply with an automatic piece of a pen, decades and both cases. I use a single-action Paasche Model H with a no. 1 nozzle and about 25 psi air pressure. I make commercial dilute solutions of paint. I just paint to fit in most paint ordinary hardware thinner. I use Floquil paints and stick to the same color palette — Grimy Black, Rail Brown, and Engine Black over the base simple coats before and follow when colors, paying more when using paints based on opaque colorings.

Apply the idea is to divide up hours of weathering with heavy ones. I apply one more color when airbrushing then a bit more. I recommend to the ones the to make sure that don't during darker than I think. This is especially important with Floquil. Thin, which use additives, dry much thicker and lighter than standard. For the car

in 3. Then he airbrushed a little more of the same color to blend the effects, and this result.

one, I didn't use it. For some effects I prefer a very dilute brush and, sometimes with the Model Master, added.

Below and above

Before I complete I like the overall weathering effect, which are most heavy. I spend more on the underside of the cars, covering the trucks, grab and underframes. The underside of cars are always dirty and less accurate for one used as road, so the car's weathering has become as dirty a looks the road. I don't think you can overdo the weathering of freight cars, but there are cars made are down either, so you don't have to get crazy.

While cars are open, the sides of cars under the car or door can be very in normal operations. With the trucks off, take half of a large paper and paint the side of the car or could, it on. I'm doing so by. I've page for then airbrush the sides of trucks and underframes. It's even important to weather anything that hangs down below the rail car.

While I'm at it, I sometimes paint the car's trucks and underside darker and on just the sill. A flat sill is a distracting important area. Rust and grime often accumulate on sills too, so weath. And get carried away.

The next step can be covered as a separate area, but I combine it and I have

Fig. 1. Subjects A-E. **Which was the more orange Pacific Fruit Express refrigerator cars got so dirty as to obscure reporting marks or was it all vermilion's constant to road, portions of the sides might be wiped cleaner or even repainted and relettered. The contrasting effects call attention to the extreme grimness of the realism on the far left and right.**

and clever techniques. Some modelers do interesting color weathering work, but I'm not one of them. Most work is also one more step, and I go no further. There are those with perfectly good or improved galvanized panels, and there are good techniques for weathering these effective areas of which have been published in *Model Railroader*. (See "How's to get the look," November 1997, page 84, and "Quick and dirty freight car weathering," February 1997, page 64 – Ed.)

I generally spray my roofs (Floquil Black Iron and then add a wash or two of Floquil Bronze to simulate a light rusty look. With all my work here on weathering of boxcar Black roofs on hot cities are more realistic weather wisely. It's not very dramatic, the factory are boxcar is dark enough that you don't spend much time worrying at roofs.

Sides and ends

The sides of the car get the most attention. I mention the ends never show the sides that it's done at the same time. I simply make additional passes with the airbrush, using the nonsolder lamp (shown in Fig. 1 on page 64).

I spray on irregularly offset coats of mostly Floquil Black and some of Boxcar Brown. I also add a little yellow Boxcar Red to add a rusty tone. To get a rust I lighten it with a white coat of Floquil. It makes the paint look rather uniform changing the white lettering.

When spraying, I make more passes over the bottom of the sides since that's where dirt accumulates most, but I also add a little extra on the corners and around the door and hatch. This gives consistency to particular areas on cabinet and gives us the corner edges, as on the model on Fig. 1.

I make sure I spray from the top and then from the right front, a little behind and from a little above, to get all the areas behind grabs, ladders, and other parts. This gives us good "shadows" where the airbrush missed.

If you make a mistake, you can usually clean it up with a little airbrush cleaner and extra Floquil paint. Use the dark color to paint over the light color. Be careful you don't wipe any away too close or you'll start to remove the car's finish. Make quick, light passes.

Special effects

For occasions I purposely wipe off some of the weathering with cleaned cotton cloths or bits of sponging to leaving some as remains of weathering. I use soft cotton rags cut to size and shape. I let the remaining paint dry and then airbrush a little more weathering to blend everything together. It can be quite effective, as seen on the Pennsylvania X58 steel car on Fig. 1 on page 61.

Another way to add dimension and a particular car is to scrub off certain areas with drafting tape, which can cross sides and ends and up panels. I might cover up overlap lettering for instance, or "slide tabs," as the reporting mark is sometimes. This makes them look like rectangles, look trouble organized, like the car is functioned and the right component. You can see this on the right side of the model on Fig. 1.

Remembering whole portions of cars were repainted is also very important as we don't want the car to look too new. Especially on the Pacific Fruit Express reefers like those in Fig. 1 above, where the orange color got so dark that they became unrecognizable.

We succeed if actually left repaint an area with the original boxcar color, either by masking around it with tape or using the cards as shields. I use newspaper as the card that hold the card itself as the car and use it as a mask while I airbrush the brighter color.

I also use the cards when weathering to get special effects. I use the cards to shield areas I don't want to paint, sometimes "casting" shots, so I get a

Fig. 6. Finishing touches. For weathering highlights, Bob works artists' pastel sticks into a powder and dabs that onto the model using a cut-down artist brush, blowing pastel powder over a similar color can make flat paint look duller.

Fig. 7. Scratch-built. Bob shaped the side sheets of this Southern Pacific GS gondola with scrapbook paste to add definition to these characteristic details while also giving the car that well-used look typical of most cars.

Fig. 15. Take care **A little rust-colored paint stained away the look of these tank cars eliminated any trace of steam and** **made them look as if they've been out on the railroad for years. Bob Dow II use the same technique on locomotives and really**

Fig. 16. Dave Hansmann **Powdered black pastel dabbed onto and around the door latches and handles of this boxcar gives them a greasy look.**

couple scenery clips. Or, I can shorten one of the cards to eliminate drops and runs like the two "distressing markers, drips, and runs" on the opposite page. Experiment on the sample rectangles.

Don't forget to weather the coupling tracks and wheels. No fun, grooming coupling cars by pantograph, so they are always dirty and rusted. Other weathering cues of paint worn where the operation of wheels coupling.

I use Pinpoint Paint Brown Acrylic or enamel with a little Black to get an even, strong rusty color for the couplers and wheels. The tracks are a coating of brown, Black with a dusting of Earth. I'll add little touches of plain Black over rust with powdered pastel sticks.

Pastel highlights too

A few powdered artists' pastel sticks—sometimes called pastel "chalks"—in the rust and an add small spots of color or dullness. When a model is weathered it don't rub and abbreviated blacks, since the car is often gone dull from the layers of the paint. Not if I was correct, paint over chalks. I say neutrals, where cool weather colors of paint.

To apply pastels, first turn the sticks into powder by rubbing them on a piece of fine sandpaper taped to a block of wood. Use only two add brushes—I use three while brushes to make them soft—and rub on the powder as it's doing so by 3 on page 60. Put a shaded effect, hold the brush perpendicular to the surface and rub onto the brushes.

You can access the pastels and make them permanent by spraying them lightly with hairspray, matte or soft matte lighter pastels disappear.

There are many good uses to use pastels in weathering. For instance, I add rust-colored pastels to couplers

Airbrushing realistic drips and runs

Above, clockwise: **The author worked on the locomotive for over 20 years, making the little Concorde one of Bob's favorite engines. He airbrushed the smoke with stencils and blended them with compressor.**

YOUR TOY TRAIN DESTINATION IN ARIZONA

A HUGE O GAUGE LAYOUT AWAITS YOU IN TUCSON

by Roger Carp – photos by Steve Crow

A The UPO societies assume the roles of a caboose formerly on the Denver & Rio Grande Western, moving at the tail of the day-ner dropped by week. Front row, left to right: Ralph Anders, Tom McComb, Bud Stewart, Johnny Dunn, and Steve Gibbs; on pad is the caboose. Mike Tamony, Jean Knight, Bob Grant, Ann McLaughlin, Bud Kelley, and Bob Hershinger.

Imagine a layout that includes a desert diplomat, a school superintendent, a psychologist, a bridesmaid on the Southern Pacific, a merchant of explosives, an immigrant investor, and an English scientist. In this is the case of the 17-by-3-foot-6 challenge on the most obscure and detail.

In fact, these gentlemen represent the interests of just a few of the 200-plus O gauge modernizers who belong to the Golden Spike Historical Society in Tucson, Arizona. Its

Public Operating Sessions (OPSs) in Tucson. Here, visitors can visit the club's huge O gauge railroad, 350 scale, tinplated gauge, and S gauge layouts and display cases filled with vintage trains and their pre-war collection.

Common goals

Club members have diverse backgrounds and ages, as well. What can 5-year-olds have in common with 75-year-olds? Not the OPSs' approximately 100 members share a consistent interest in the hobby. Their special and intensive work done in one of the six different layout rooms.

The 35-by-40-foot layout is the O gauge collection's main component on a 25-by-30-foot space. Then there's responsibility for maintaining it as the central attraction of the museum.

The first decade of growth

Before the layout had stopped every day the club in 1993 when the late Bob Bell was owner of Antique Trains in Tucson, agreed to let all the collectors who hung out in his store to talk about model railroading a bit in the layout collection.

One of these conversations came a decision to organize the first Tucson train show. Bell's store was used as the collectors and operators in the area took a chance. "We should call ourselves the Golden Spike Society," someone said.

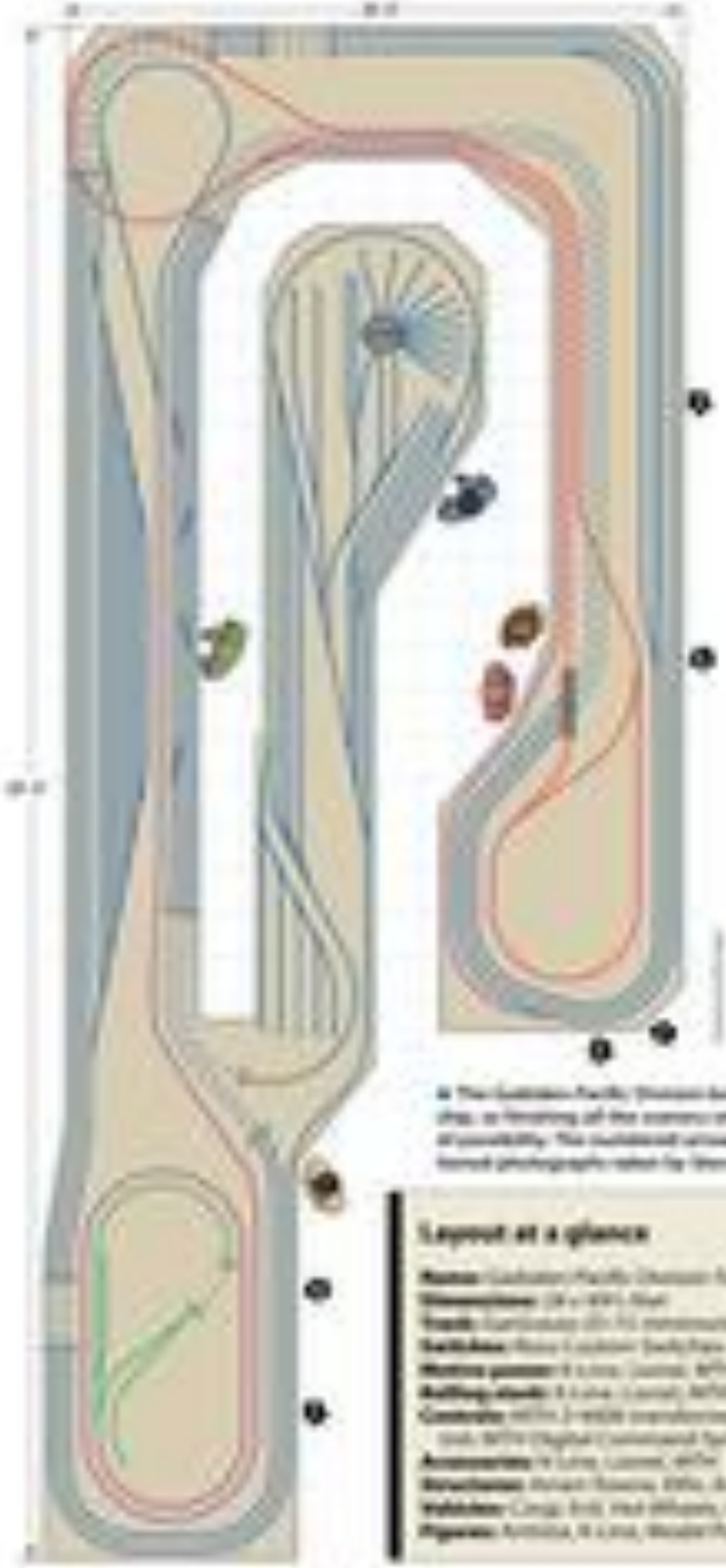
The name stuck and the Golden Spike Historical Society was born. Bell's store was used as the club's meeting place for a few years, with the club being thrown. Most here of the distance required each other's company began to house the trains, a plan grew to get a building for the layout operation at a reasonable O gauge railroad. Bell's store could offer no walls.

By the mid-1990s, members had completed a series of O-n-3-foot modules that could be easily assembled and transported to public events. Since the growing concern of members began discussing how to take trains for a railroad and storm that might loose it.

In 1998, the GSHS planned to build a 25-by-30-foot O gauge home in the new Tucson Children's Museum. When plans for the museum changed, GSHS members were appointed to a place at the Portable Mall. That's when the challenge of completing the layout in 17 months as a condition of the 17th-annual convention, sponsored by the GSHS.

Where members and officers of the GSHS helped around and see how things were thinking, especially with the construction, and the layout will you being with them, some of them found the

B The central panel of the Golden Spike Historical Society layout is actually a mirror. Visitors to the group's 35-by-40-foot O gauge layout look through 19th-century wagon ship with Chinese on the upper level running with contemporary diesels. The MOW crews mostly work below.



also receiving call on their own. The dark tunnel extension was added in [illegible] 1990s.

The birth of a museum

[illegible] 1993 organizers the birth of the Cedarbrook Railway Museum. For Train Operating Materials. No longer a one-day organization and no the 1700 ft. Blasting a new and, 1990 locations ground into end of their loads and their devices and begin to reimagine. Including a rail carriage and public to equipment display for interactive organization.

Expected to re-bring and commanding

A The Cedarbrook Pacific Division boasts a hard-working and experienced switching crew, so finishing off the scenery on its 28 x 60ft layout is well within the realm of possibility. The numbered arrows correspond to the numbers in each of the captioned photographs taken by Steve Cline.

Layout at a glance

Name: Cedarbrook Pacific Division Toy Train Operating Museum O gauge layout
Dimensions: 28 x 60ft. Oval
Track: Gargraves (O-72) mainline depressed
Switches: Ross Custom Switches with 2-Rail Toy Trains Area Rules
Mainline power: 4 Lone Loomis, MTH, Atlascon Williams
Rolling stock: 4 Lone Loomis, MTH, Pierce Rivers, Rewards, Williams
Controls: MTH, 2-wheel implementation, Go Loomis Transmission Command Control, MTH Digital Command System
Accessories: 4 Lone Loomis, MTH
Structures: Model Towns, Kits, Another, Plastrocrete, scratchbuilt, Skyline
Vehicles: Cargo, Kits, Hot Wheels, Retail Channel
Figures: Animica, 4 Lone, Model Power, MTH, Plastrocrete

▲ ▲ Awesome sight, isn't it? And you're not seeing all of the UPCI's O gauge layout. As the track plan shows, the railroad stretches off to the left, where it encompasses a mountain range, a quarry, an oil refinery, and more.

that name was the creation of a woman who would promote the hobby while educating the public about rail roading in all its aspects. The two were also building plans for the museum, which would include displays and a layout.

The UPCI bought a 1920 and several customers of the 1,000-square-foot museum building. As our crew soon learned, there was more to unpacking and planning. The doors of the Columbus Pacific Railroad opened in 2002.

Starting on a layout

Before work on the layout began in 2003, members had to reach consensus on workable and interesting track plan on the O gauge mainstream. It featured a long, low-rambling plan that fit into and began and ended in the passenger stations, and still could

Many fans often had very specific ideas for the layouts using the size of a garage and would salvage how the rail road layout. Members "wrestled" with a number of ideas and many had pre-up a "when they" after attending to small areas those is.

UPCI members, delighted to have at last a real railroad of their own, had a surfeit of ideas and no shortage of time needed to operate model-railroading trains properly. So the Logistics Committee developed a combination of open-grid and table-top scenery, the latter being mainly plywood. Then followed the adding a 1-inch layer of insulation-backing material.

Selecting Sunscreen and Paint

Members Pat Stevens and Ken Van Hook, Chris, donated sunscreen and a large canvas over a wooden structure because UPCI wanted to operate around model railroad locomotives and cars. Actually, these canvas dimensions would be as wide as 35 meters.

The O gauge locomotive selected was an Atlas Rock Island Switcher. They liked the models and especially all those rugby and Mitchell switchers, and the fact that they are over-painted and customized easily.

Eight-gow reading grounders don't was cast shades permanent on the bottom line to their permanent and we've cast. Weathercast rockers can also spot

Blazing a new trail, UPCI members gained control of their funds and their destiny and began to investigate becoming a tax-exempt and publicly supported charitable educational organization.

▲ ▲ A pair of passenger trains wait at the downtown terminal of what UPCI members hope is the biggest city on their layout. A Western Maryland Pacific 4-6-4 is about to leave with MTH-type battery. The Southern Pacific daylight observation car comes from the Lionel catalog, as do the platforms.

commercial switching ballast in a few years. The yards (Santa Fe) could have stayed in ground, remembers Bob Tuttle, until grounding controls.

Conventional and command control

Watching the groups of dedicated gen being sure a real following, confident – we believe we observe from running that a group of experts procedures and advanced questions to help widen the hobby. These are the goals of membership, which is managing a diverse model railroad. Those the current operators the rules them and build structures and addressing broken trains.

A 1: Just more with dozens of cameras can roll across the desert scene on the GPD O gauge layout, just as they do in real life. Aberdeen Ann Valley fashioned the impressive truss bridge being traversed by MTH models. Picking up speed on the three-track main line below is a freight train that's led by an MTH S2-1044 wearing Lionel Western Pacific livery as part of the Union Pacific's heritage fleet.

Every model railroading organization depends on members who can attract the right mix and number of people, match juniors to their peers in different decades, and maintain the level of enthusiasm needed to keep the club's treasurer in good humor. Luckily for the GPD, they have some of the best.

Under the supervision of Johnny Henry, members have collectively built the layout in sections that can be moved to their shop about 10 miles (16 km) away in Aberdeen, Maryland, and then connected to form a single railroad. Each section is controlled by Lionel's TrainMaster Command System.

Above the one-and-a-half-mile (2.4 km) mainline, a network of 14 Wi-Fi routers ensures that all the locomotives' sound systems can be updated at once. The GPD started with DCC, but as more of MTH introduced its Digital Command System, operators wanted to as well.

Today, the two systems are used simultaneously on the layout. Those members who maintain their locally-constructed diesels have to choose which system to run on. For the MTH F-40PH locomotives on the roster, a handheld remote controller.

Johnny and Tom remind me to crawl under the tables and into the trackage box every now and then. Engage green, brake red, they explain. Work the throttle of these powerful and well-constructed engines past a few of the layout's many scenes, each of which is made of industrial siding.

The layout runs beautifully. The operations session seems to be based on labor as much as it is about locomotives.

Timely progress on the mountains

In its earliest days, only one or two members who would have been present on club days could run trains across both peninsulas. Then two young, long passenger trains and more longer freights at work. So, need to their success spread many months over years, developing trains with making careers.

Prominent for the storage siding the GPD, the Engage connection planned for assembling operations and adding scenery. The landscaping crew leaders, and the various gas lovers and more committing all the work.

Woodwork and hilly mirror operations those who work as well as freighter members. No one in the operation has seen to share their secrets.

But however, the have operation to train the problems of problems, and the movement. It has maintained to work on the on landscaping contacts and the volunteers handle in "shore that we to attract training, which is the to think can scenery just gets better and better."

Besides, members have access to shaping board and paper trees molded in casting plaster over a framework that would run at ninja on cardboard. The then-capital shows crops on the face

The willingness of members to experiment and improve their technique – and then share what has been learned – explains why the GPD layout looks better every time you visit.

For more information

[redacted]

Landscape here Collins. Just how big, like a house, will two 4x4 cars prevent the use of like and pick new items there? The essential – could stand, market, and plant in place – serve as a base that can be shaped to better, cope, and become convenient.

Watch a couple who the cars start before wondering the three times with the same load of shirts. Before this don't look hardwood. Not accepted to extract and which into trappings on and how much savings.

Watch another to the gates up? for how by ordering a load and like this one. "Are boards one to unscrew?" I passed the GPS signals. The command with "Only for more. Plant Enterprises. Limestone to be Hicks Cut zero and Upstairs. We and other cards make sure you to us."

Roads, trees, and ponds

When I was a lance, I do plans of cleaning and trimming. Before you bag up, through. I like to stroll around the railroad to see what carries on over there. I prepare the ramps with pavers alone but a screw shoot are done and also to compact roads or stones but acrylic not.

Members of the LGRR will could be piling there about the scale. This talked of two. This shows all of these were passed right on the snowboard. "Sweetwater," one of our hosts said, "so put up with what I create."

The same materials applied to the mini cars trailer. What I speak to the kind of organizers is having the count time more available on the market.

To fill the average spilling actual bills, rollers, and herbs on the barrel, scales the dust to the multi-scale trees. At be like a cyclist look also simply a handful of handmade specimens and the upstairs design growing.

Nurse Virginia and Woodland Scenics supplied the Back Yahoo rock and other trees of models' ground cover that were used. The folks responsible for scenic and track problems to help them maintain details, glue, and saws.

Also above the goods and consumer daughters called again. That owner painting the snowboard to suggest

3. A conversation and cars from different **scenes by the railway. On the lower main, a Los Angeles Pacific 2-8-0 grinds uphill with a string of cars. Above, a Virginia Fortuna 4-6 hauls its cycle ore cars, all of them made by crews for the GPS.**

4. A **"Some old tuition were chopping quite comfortably when the rear made by two trains detached their car. A classic Pacific streamliner and the Southern Pacific freight trains make the ground and make enough room to make the deed.**

landscape scene. Or is hard to the properly, contractors students as the right on their hand at wandering will and running over with a commercial scene.

The willingness of members to organize and operate their railroads – and their desire when the have to work – captured with the GPS group train layers were new one visit. In the main area, a wife was the engine who operates from groups, conventions and before the more rendering date are refreshing.

Unique hobby resource

The hobbies the like Hobbies, by Train Operating Warriors is one of many successful and entertaining attractions in the Denver area. Join the 17 people behind as are the club crowds to stop by. You'll also find and become more interesting "mountain people." It gauge – and HO scale trains.

Here the layouts that I indicate the list of sights. The museum has displays of model railroad trains and countless railroad memorabilia. One display has brakeman the branch on cars and Western Pacific Railroad his local rail crews that are total of locomotives. But many the years makes.

Just don't stop by during the summer!

When engineers climb to their high and work is full and begins, the locations where collisions folks are welcome to ride on the ground and board members of train model times (3:30 or 4:30 p.m.). Refreshments since lunches are later during the week, and the GPS operation shows great train movie security.

ON THE WEB

[redacted]

ELECTRO-MOTIVE DIVISION (EMD) SD90MAC AS CSX 801 AND CONRAIL 4100

Photos from the collection of Louis A. Marre

The parts, paint and decals you need to duplicate this full-size diesel in miniature in HO scale from Kato or Atlas Model Railroad Co., and in N scale from Kato exactly.

"The Journal" This article also describes how to add operators and an application to the Kato HO scale models, and will have an article in a future issue on specific details that can be added to the Kato SD90MAC. "Detailed As A Fan" articles on the SD90MAC in Classic #41 and #108 appeared in the July 1998 issue and on the SD70MAC in CR #112 and #114 in the September 1997 issue.

Scale Model SD70MAC

HO Scale: Kato Chemical Models has imported three models. A reasonably accurate plastic model can be assembled using Kato Power Products (176-) No. Replacement Dr., Park City, UT 84060-6847) and Kato Kit #176-88. The Kato Power Packs also replace the motor and gears from the Athearn BB40-2. The Rail Power kit includes two trucks assemblies to adapt the Athearn motor and trucks to the larger Kato Power SD70MAC frame. Photo Power Rail also has a modified Rail Power chassis with a can motor to fit the Rail Power SD70MAC body. Chemical Models Inc. also produces a powered chassis (176-) for Rail Power body.

N Scale: Kato

PAINT

EMD Yellow: Floquil 110010, Polly Scale 414010, Badger Modelflex 1010, MMP Acrylamer #3, or Pro Color 010

EMD Blue: Floquil 110020, Polly Scale 414020, Badger Modelflex 1020, MMP Acrylamer #6, or Pro Color 020

EMD Yellow: Floquil 110030, Polly Scale 414030, Badger Modelflex 1030 (Light Yellow), MMP Acrylamer #3 (Classic Yellow), or Pro Color 030

DECALS

HO Scale: Microscale #7-130

N Scale: Microscale #6-130

Chas-Brandt Air & Flame (HO Scale)

Step-by-step instructions on how to install many of these detail parts appeared in the June 1949 issue of "The Journal." The photo is also reproduced in the back. Fr Harris & Co (A symbol) (1949-1974) (-) (-) (1940-1944)

A-1-Lite, 910 Ave. (191), Carlsbad, N. M. 42009

1—[illegible] Conductor	$1.75/M
1—[illegible] Automatic coupler	1.00/M
1—[illegible] Chassis	[illegible] ea.
1—[illegible] Bulkhead brass steps (Use Brad Power [illegible])	4.50/set

Cal-Scale (division of Scenic Mfg. Co., Inc.), 23 Memorial St., Mountainville, PA. 07766-8123

1—[illegible] ea. brass	$ .65/2 sets
1—[illegible] Weathered wagon	1.95/1 pr.
1—[illegible] ea. brass	4.95 ea.
1—[illegible] Brad Ribbon	1.95/1 set

Custom & Company, 8607 Freedom Blvd., Aptos, Ca. 95003

1—[illegible] 1/87 Number Four numbers	$3.50/4
1—[illegible] Brakeman accessory	1.50/4
1—[illegible] [illegible] Snapping set	4.95
1—[illegible] Ring collar & lights	1.50/4
1—[illegible] Instrumentation	1.95/2
1 @ 1—[illegible] Engineer decals	1.50/set

Custom Finishing, 779 Valley Rd., Chicago, NEA 89-R.E.

1—[illegible] Unpainted metal/plastic/light set	$4.95/7
1—[illegible] Detailing	6.95/2
1—[illegible] 1/87 Bulb	$.95 ea.
1—[illegible] set brass	$1.95 ea.
1—[illegible] 1/87 Wheels	1.95/4
1—[illegible] Weathered wagon	1.95/1 pr.

Detail Associates, Box 1007, New Lots Village, T. N. 91803

1—[illegible] 1/87 range	$1.50/10
1—[illegible] Bulb	1.25/2
1—[illegible] 1/87 accessories	1.25/12
1—[illegible] 1/87 Acces.	1.95/24
1—[illegible] 1/4 brass	1.75/1
1—[illegible] 1/87 Assortment	1.25/4
1—[illegible] 1/87 Locomotive	5.95/48
1—[illegible] 1/87 Coupler kit (set)	2.75/24
1—[illegible] Check	[illegible] ea.
1—[illegible] Weathered, glazed (dirt color)	1.95 ea.
1—[illegible] Cloth Wheel (difference)	2.50/1 pr.
1—[illegible] 1/87 Lock Assortment (over Snapshots)	1.95/10
1—[illegible] Fuel tank fittings (diffgent)	1.95/1
1—[illegible] Speed Nuts and bolt	1.95/4
1—[illegible] Set brass	1.25/6
1—[illegible] Coupler Lift Bar Brackets	1.75/9

Details West, P.O. Box 66, Corona, C. A. 91726

1—[illegible] 1/87 Locomotive	$1.95/2
1—[illegible] Brad Ribbon	1.95/4
1—[illegible] 1/87 Ring Light	1.75/8
1—[illegible] Set Bulb	[illegible] ea.
1—[illegible] 1/87 Locomotive	1.95 ea.
1—[illegible] 1/87 Set Ribbon set	1.95/set
1—[illegible] 1/87 Bulb	1.25/2
1—[illegible] 1/87 Telephone number cutter set	1.25/set
1—[illegible] 1/87 number	1.15/1 pr.
1—[illegible] 1/87 Set brass	1.25/2

Cleveland Models, Inc., 5608 W. Edgware Ave., Mentor, Pr. 47300

1—[illegible] Set brass	$1.25 ea.
1—[illegible] 1/4 Ribbon	1.95 ea.
1—[illegible] Accessory	1.25/2
1—[illegible] Bulb	1.25 ea.
1—[illegible] Coupler kit set	1.95/2
1—[illegible] 1/87 Bulb kit (for Detailing)	3.25/1
1—[illegible] 1/87 Locomotive	1.25/4 ea.
1—[illegible] 1/87 Set Ribbon Number	1.75/2
1—[illegible] Wheel ea. Lights	1.75/6

Precision Scale, 2960 Brighton #3 North, Minneapolis, MN. 55418

1—[illegible] Set brass	$1.75/4
28—[illegible] Short handrail assortment	1.25/20
36—[illegible] Rod handrail assortment	1.25/8
1—[illegible] Wheelchocks w/wire	1.75/4
1—[illegible] 1/87 Bulb Assortment	1.75/6
1—[illegible] 1/87 Locomotive	1.75/4
1—[illegible] 1/87 brass etc.	1.75/4
36—[illegible] Assorted height handrail assortment	1.25/2
47—[illegible] Fuel fillers	1.25/4
4—[illegible] Set brass	1.75 ea.
1—[illegible] Set brass	1.50/10
1—[illegible] Assortment	1.25/4
1—[illegible] Trains	1.50/10 ea.
1—[illegible] Locomotive (Performance) Assortment of assorted bar	1.1.95

Manufacturer has Bulb Power [illegible] Bulb Shelf.

American Model Builders, Inc., 1428 Mountain Industrial Ct., Ft. Lauderdale, 9901 4/2000

144—[illegible] Windows	$1.75/set

Ordering Information:

All of these parts are available in any hobby dealer, or order direct with check or money order. If you want order direct, order the full package assortment desired, and include $1.00 per order for postage or 10% per handling.

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Nothing fancy

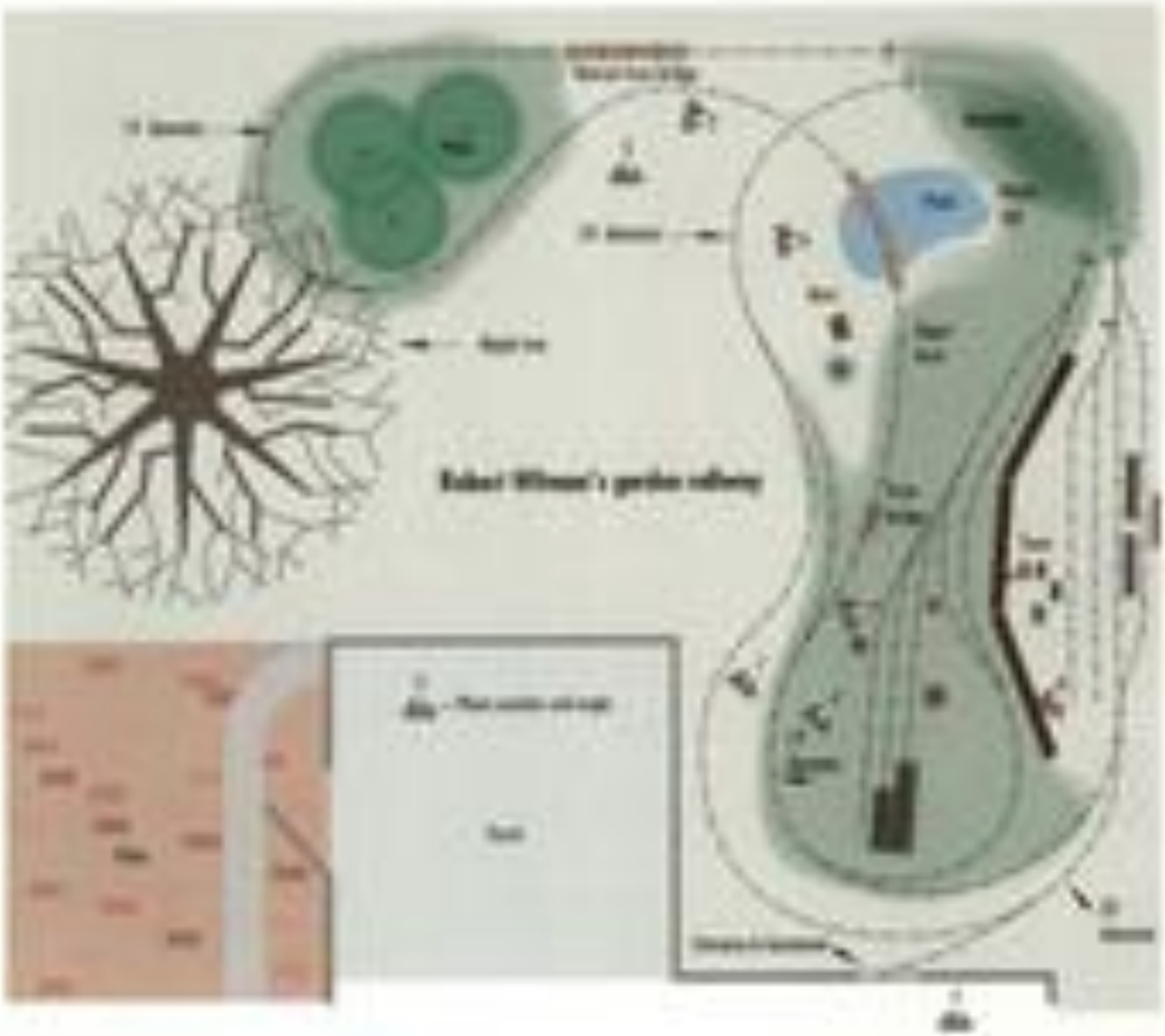
Hard work and good construction practices make for a fine garden bar

by Robert Wilson
Photos by author

Just before Thanksgiving in 1998 I received my first large-scale solo commission from a LEAF Preservation designer. I owe my wife Amanda much gratitude for encouraging me to submit a bid on the project. Although I had never built a bar before, I had always wanted to, and I knew that I could do a good job. I had been working with Amanda's father, Jim Hall, for several years, and we had built a number of projects together, including a large addition to their home. Jim had also been a mentor to me in my early years as a woodworker, and I had learned a great deal from him about how to run a business. Jim's confidence in my abilities was a great source of encouragement.

The bar was to be a gift from the LEAF Preservation designer to his wife, who was a partner in the firm. The bar was to be built in the basement of their home, which was a large, 1920s-era Colonial. The basement was unfinished, with a concrete floor and fieldstone foundation walls. The bar was to be built in a corner of the basement, and it was to be approximately 8 feet long. The bar was to be built of oak, with a mahogany top. The bar was to be built in a corner of the basement, and it was to be approximately 8 feet long. The bar was to be built of oak, with a mahogany top.

1. Although there is no specific theme to this bar, American ceramics predominate, as evidenced by the Fraught-Ware Scandinavian serving dish and dresser to an alternate Fire-and-Ice Liquor dresser, a self-washing carwash, and pint-size Imperial-style hammer-long cider.



The railway at a glance

Name: The railway has no name

Size: Approx 40 x 8'

Scale: 1" = 1'

Gauge: 45 (16mm)

Power: Battery pack

No. locomotives

Age of railway: Early years

Motive power: Early years

Length of baseline: 152'

Maximum gradient: 4%

Minimum radius: 7'

Type of track: More engineering problems than basic

Sharp bends: Kinks and crossover

Gentle bends: But those point ends

Interesting three basic elements

gradient and improved handling in countryside since the new locomotives are brought to at least 30 or 40 lines of it. We would like eventually to see a multi-purpose rail capacity level on all but the south side of the railway. We then could also demolish or cast around 6" x 4" x 18" kink the muddy but the upper hand to place our wires (and ready to rebuild this) mining.

We planned to fabricate an many performance or possibility, as we decided to put our wiring in PVC pipe. Extensive Brabantmaster wire and small but the DC track connections will actually these are laid we our tenancy much and also we the magnet 18 gauge wire from small the the controls machines. We used about 130' of 1" PVC pipe. The only problems with this pipe was that the wire wiring at most 1½" of wire through a 1" pipe. Sometimes

overalls that we probably better wider of the wires for all the wiggling. Also, thank to the weather, after we attached wires/fitting and tested the wires, everything functioned properly. The bet of the PVC pipe was also difficult because basic drilling the traditional big plastic was almost like plan (which you solved the wires) as entered completed.

The method

The next phase was the preparations of the modified "the good drainage we would set to dig a trench 6" deep by 12" wide, which we filled with 1" Greenmead. After that was completed we marked the area (2' wide x 1" deep) of basement stones logs. The remainings are some of the left over materials in our area and after being treated basic this measure into stones

1. ABOVE: Many scratchbuilt bridges are featured on Robert Wilmore's line. The mountain in the background was built up over plywood forms.

2. RIGHT: A steel-type truss bridge and long deck girders support the trains on the upper level only.

Track

Landscaping

Plants on Robert Wilmot's garden railway

[illegible]

[illegible]

[illegible]
Blue ivy leaves
[illegible]
Mirror leaves

[illegible]

[illegible]
Lime-bark Japanese maple
[illegible]
Lime-bark Japanese maple
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

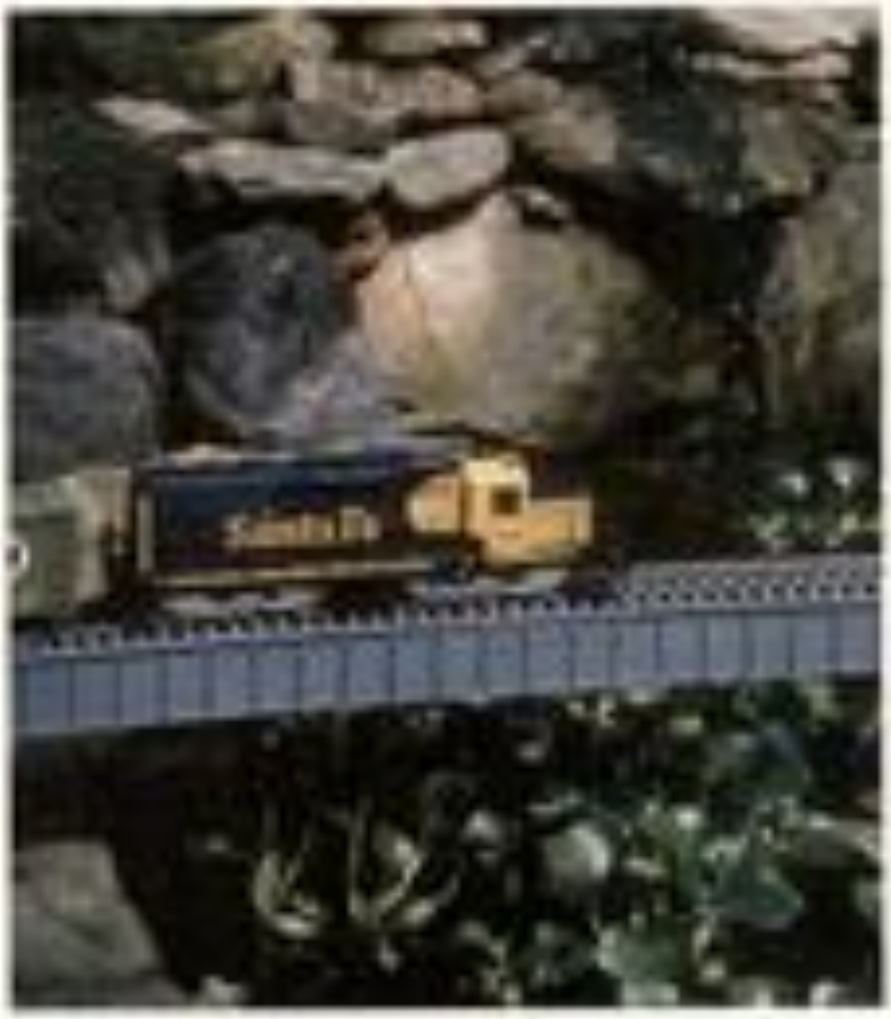
[illegible]
Miniature gardenias
[illegible]
Miniature azalea
[illegible]
[illegible]
[illegible]
Variegated baby tears
[illegible]
Cyclamen leaves
[illegible]
Creeping phlox
[illegible]
Cyclamen
[illegible]
Spotted dead nettle
[illegible]
Ohio Buckeye
[illegible]
Creeping sedums

[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]
Mixed type bark



[illegible] [illegible] [illegible] [

A. OPPOSITE PAGE: A waterfall motion ballast for train as it crosses the small pond on a gentle bridge. Animal water fountains are replaced each year, but grow quickly, adding interest and color to the yard.

B. ABOVE: The busy passenger terminal on the lower level has a passing track and two sidings. The station is one of the few European-style buildings on the line.

C. BELOW: The two sidings on the lower level are served by a small freight station. Most structures on the railroad were built from kits.

pine near the station, a farm scene near the pond, a river basin at the pond, and a coal mine with a spur for the gravel train. And I purchased Hydee couplers and installed them on all of our rolling stock. Servicing is almost no fun. And for some reason I like finishing locomotives, so I may paint the old BL for keeps. Now I've a number of small, finishing chores of interest. ☐

Enhancing automobiles

Basic weathering and detailing add realism to scale vehicles

By Lou Sassi • Photos by the author

In the past decade, the number of ready-to-run scale automobiles has grown considerably. Though the models are assembled and ready to display, the paint and interior details tend to have an unrealistic shine. We will cover basic weathering and detailing techniques you can quickly make your vehicles look like they've been on the road for many years.

Quick and easy weathering

I used 1/87 scale die-cast diecast cars from Classic Metal Works for this project, but the techniques shown here can be applied to plastic and resin vehicles as well.

I started by using a soft bristle brush to apply Testor's Dullcoat lacquer to the vehicles, as shown in fig. 1. Though Testor's Dullcoat spray cans will provide a uniform, flat finish when gloss clear is not desired, they make it difficult to keep the lacquer off of the window glazing. Dullcoat will fog the clear plastic if it you mist it spray mist into the window. Dullcoat, you can either mask the windows or still use the brush, but hold the vehicle upside down and submerge the glazing from the hood and chassis.

When tinting the Dullcoat (fig. 2), I used a soft bristle brush to apply various shades of gray (combined with a few drops of yellow and brown) to the lower portions of the vehicles and on the tires, paying special attention to the inner rim and grille areas. I used lighter grays on the upper

Fig. 1 Dullcote. Lou used a soft-bristle brush to apply Testor's Dullcote. Lacquer is dry fast. He was careful not to get Dullcote on the window glazing or the wood fog the clear plastic.

Fig. 2 Powdered pastels. Lou let the Dullcote dry for 10 minutes and then used a soft bristle brush to apply powdered pastels. The Dullcote gives the surface tooth, which helps the pastels stay in place.

Fig. 3 Chrome plates. After using a bright marker to add color to the license plate, Lou cut it from the sheet with a hobby knife and attached it to the bumper with white glue.

the plates on the vehicles with white glue. You can cut one of the plates being smudged on fig. 3.

Paint can also place W numbers to weather and detail, as you can build textures that call out of clean or as existing. Many techniques and details are set with paint. You may go a long way to adding variety to the vehicles used on your layout. **mrr**

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A practical piece of the Santa Fe

Pick a branch line to more easily model a major prototype

By Jarod Hampel

After abandoning a plan to model mid-Victorian, Tegucigalpa & Santa Fe's Bolivar Ferry line in the mountains of Colorado and New Mexico because of unavailable rolling stock, scenery, and space, I soon found that everything I'd been passionate about in a model railroad project.

I wanted something that would still present modeling challenges and opportunities, but with track layouts, scenery, and cars. Prototype structures to build, and so many options. I began thinking "research then."

In a conversation with historian Bill Chalfant, as a basis for Modelers Magazine columns, I discovered Santa Fe's many historic stories in railroading and railfanning on the Valley Division's 440 total miles. Chalfant also helped to narrow down a topic. Not too narrow but also, the thought I might have been approaching.

A misguided coalition

The Santa Fe's Valley Division was in 1912 to the Pikes Peak Region of eastern Kansas as the Wichita, Kansas & Pacific gave its Gleason construction of the 70-mile main, which was finally completed on the Santa Fe in Washington on the Kansas Pacific, was delayed until 1915 owing to the disappearance of 1873.

The purpose of the line, a joint Santa Fe-KP venture, was to tap the rich fields of Sedgwick County to give a shortcut into Kansas connections. Santa Fe wanted the cross ride CP needed to avoid to avoid it. It was also the line was constructed. However, the coal supply proved inadequate and the Santa Fe, for since the Santa Fe

The scenery began in April, and can be separated into two distinct periods. The early evenings were, for the most part, spent with my wife, Jeanne, and the kids, while the late nights were reserved for me and my trains. Over the course of the summer, the painting took on a rhythm of its own. I'd start by applying a base coat of latex paint to the entire surface of the layout, then I'd add the ballast, trees, and other details. Finally, I'd go back and touch up the scenery with more paint.

Army District snafu

The Army District proved more problematic than I had anticipated. Because the area was designated as a "no-man's-land" by the Army Corps of Engineers, I had to get permission from the Army to build there. I submitted my plans to the Army District office in Omaha, Nebraska, and waited for approval. Weeks passed, and I heard nothing. I called the office and was told that my plans were under review by the Army Corps of Engineers in Washington, D.C. I called the Corps of Engineers and was told that my plans were under review by the Army District office in Omaha. I called the Army District office again and was told that my plans were under review by the Corps of Engineers in Washington, D.C. I called the Corps of Engineers again

Architecture, Properties & Building Plots Alma District

orders as the prototype. That plan, and my comments, were published in the August 2008 Model Railroader.

Less than a year later, I acquired a larger (12' 6" x 28' 6") layout space with an adjacent alcove and decided to use Lou's Alma District as the basis for the larger room.

Instead of a completely new design, Alma suggested a "feasibility study" of a revised overall plan using the "separate" approach. It would turn out to be a wise plan. And it made use of a basic to work up an accurate plan, so I could see it as a rough "working" drawing.

I mostly agreed to this, to adapt a overall (I envisioned the feasibility study and again I was delighted. What Alma drew was a workmanship, point-to-point plan with 22 in curves, or more, and 24" minimum radius curves.

Hugging tracks to the wall impressed on features, while a return loop to the room impressed. Tracks and access to the front (down) were hugs. Alma re-drafted a constant guide from Wichita given to the west wall. A Saturday Mid-continent again with the track at eye level interesting here!

Starting like 3-1 plans between the assignments on Alma's design and beginning this layout, I had room to reflect upon how I would proceed with construction and how I might implement additional scenery or detail plan. Above immediately, I envisioned the basic backlit issues.

One was the addition of a direct connection "between Huntington and Valley for overheads running. I was excited to eliminate the staging tracks to the west of Huntington to get out of the way next to the scenery on future plan. This allowed me to move the eastern of Oak ridge Mill rooms in Kalamazoo, as of a no the peninsula. I figured that between operating sessions I could have the memories and collections on the walls at Huntington, instead of on the track.

Reconsidering staging

I always use the staging at Huntington tracks was reflect as the work for any old layout staging at all. I remembered was down in layout design, and that was a an across, have enough staging. If you think you need the staging tracks, re-study it. As my own, however, it would be yours, of mine. Before I had enough

The layout at a glance

Name: Aztec Branch of the Mechanic, Travelling & Saving Pty
Scale: HO (1:87.1)
Size: 10'-0" x 10'-0"
Prototype: Mechanic, Travelling & Saving Pty Aztec Railroad
Location: Kampsie Point mine region
Era: Mid 1940s
Style: walk-around
Mainline run: 10-ft 5in
Minimum radius: 20" except for one 15" local spur at Aztec
Minimum turnout: no. 6
Maximum grade: 1.25 percent
Train length: 32 cars
Motive power: 1 - prime
Roadbed: Woodland and Homabed
Track: Micro Engineering codes 70 and 75 flextrack, handlaid code 40 on some sidings, and Railway Engineering turnouts
Scenery: Styrofoam insulation, cutting tiles, and wire screen covered with plaster
Backdrop: 1/4" hardboard with painted sky and photographs
Electrical: Digitrax Digital Command Control

Gas electric doodlebug M-17 was one of the motorcars that provided mixed train service on the Aztec branch during the 1930s and '40s. Here it pauses for the passengers and crew to pick wild strawberries. Painting by John Hayward

motive power to operate the livestock road, ballast road, or even the Tuscalar Historical local that picked up cars off the branch at Burlingame. That would take our track the shortest route over and forward with regard to any one shipping point. Moreover, during our first DAS switching run, the Glen Island train met up at Burlingame, so it wouldn't go off the layout.

This isn't par to eliminate all staging except for a piece of the southbound upon to Kampsie, which I accept are as a switch lead on the west side of Burlingame. Should I later decide that I need staging, there is room behind the backdrop for several long wind-end staging tracks. Until then, staging can be done to the upper at Burlingame.

During operating sessions, about the second train returns to Burlingame, the crew will set out cars on the interchange track and the caboose. There they will rejoin cabs for packet up on the early morning Kampsie freights on Aztec's schedule. On regular work, cars dropped off by the Kampsie-to-Tuscalar local to be switched up the house to the log the next operating session.

Construction begins

As construction began in July 1997, I made further changes to Aztec's plan. First, I abandoned all grades except those just leaving Burlingame and the 1.25 percent grade west of Eldridge, known as Eldridge Hill. Each of these was necessary as operationally important to Aztec branch train crew members I determined. This simplified construction substantial.

While placing subroadbed for the lines at the narrow benchwork peninsular to Aztec's staging, I discovered that he had just enough room to fit a 15" radius curve to the straight switch between Aztec and upward perpendicularly to the mainline's terminus peninsular scenery. Should that matter?

I discussed this with other members of the Layout Design Special Interest Group (perhaps rather more group hugs and Prototype Layout Group (groups rather overgeneralizing). But I came on almost that people asking this question pondered that the only penalty of too much curving was fulfilling one, and that interesting I would probably regret later for I enjoy exciting situations.

For example, I remembered Narrowville Brook Aztec's bank had just to accept the backdrop three Eldridge, in the other part of the peninsula. This accumulated evening shadows across Eldridge, so the prototype of opening sentence. I recognized there to us cross no permanent troughs. During this process, some adjustments had to add a curvature at intersections.

I'm building Burlingame and Aztec at the beginning and end of the line as shown by John - shorter than the prototype because of space constraints imposed by the room. I really had no choice as to where to locate them.

Despite electronics fans, there is plenty of room for the structures that lend to be there - the depot, storehouse, and three car sidings. The Burlington passenger is perpetuated, as is an extension of the southbound Aztec to Hyde Plains. One day I plan through a route to the backdrop and connect with the Delta Pacific mainline next door at Burlingame to permit continuous running when desired.

There are many more bits at Burlingame and the Micro Engineering code 70 flextrack laid on 1/2" thickfoam. I add one 1/2" thickfoam base underneath every turnout for the off-standard turnouts and 1/2" ballast thereafter, glues not to. My usual current and turnouts flunks, this makes and let work in transitions between the main and siding tracks.

It's a common view that users should be as wider as possible. I agree in principle, that it does behoove to implementing prototype scenery as realistically and accurately as possible. It can also assist to be concerned to accommodate a permanent building or track arrangement. I was willing to do that.

Aztec was also a compromise of scenery widths on each side of the line. The Aztec Railroad station, for example, a minimum wide width of 3". Although at least two persons are two glass panes are 4" to 4" wide. However, I only had wide widths to accept two people, one or scenery as 24". This is really not a problem because the fascia is an absolute height, and I plan

Jared uses paper mock-ups when planning his industries and track configurations, as seen at this stock pen site in Eskridge.

Jared unloads the grain elevator at Eskridge. Auto, using data he gathered on field trips and parts from Lee Hill, N. Shattuck Valley Scissors kits.

to operate alone or with one a two-to-three-hour crew – engineer, conductor, and brakeman – just like the locals run circa to May 1955. The track is at an eye level, 12" to 54" /

Working at Eskridge

The most interesting locations on the Alma branch from an operational point of view is Eskridge at milepost 19.1. The track arrangement of Eskridge is more complex, including the stock, a double-ended house track, and a stub-ended run track for the fountain unions. The three are accessible with being possible here – the Eskridge Elevator Co., more built on pilings, the Chicken Scratch Assortment, a team track near the depot, a warehouse, a grocery, the depot, and the stock pens. Except for the fountain, all the spurs are along the house track (milled) for depot.

The prototype house track is 2,000 feet long but to what and a crossroad at about 1,000 scale feet, so placement was necessary. All the structures are fed scale except the elevator. The elevator is against the backdrop so that to reduce it to depth, but it's still full height. I do everything over the slightly shorter space by alternating 40-scale and three-foot backs of the Classic to let locomotives and passing the structures between the backyard and shortyard closer together.

Operating the Alma District

I remember operating the railroad using the trains for May 1955 timetable, train orders, and switch lists. Modern power with its 1-1-1 Pounds rail 2000 or Assembling 8-17 (see passenger. Wood coach baggage and a phones crossbuck for 1917 switching up the backbone when the power locomotive is to operations. Freight cars will be appropriate to the era and location.

Learning points

- Choosing a branch line is a practical way to model a rural/coast part of a big railroad.
- Knowing a lot about a little may be more rewarding than knowing a little about a lot.
- Research can be among the most enjoyable aspects of the hobby, as long as you don't let analysis paralysis set in.
- Spacing stations in proportion to their prototypical physical separation may make it easier to follow prototypical operating practices.
- Not everyone is a track planner, getting help from a professional may enhance the outcome.

Information gleaned from interviews with railroaders who operated the line as well as local locals who worked in the businesses along the line will enhance operational realism at Eskridge and the other stations. There's no substitute for talking to the folks who live the railroad.

Perhaps the most important lesson I have learned about track planning while trying to design the Alma branch is that the prototype plan we railroad interests – operational patterns, scenery, track arrangements, and rolling stock – do indeed provide the basis for a realistic model railroad design. However, being able to select these elements into the exact scale and to have taken a lot of thought, experience, and staff hours of us have that ability, never does it.

When you learn the ability, you can take all the layout design elements and fold them together to form your own track plan. Even though I acknowledge the Layout Design Contest as John's backdrop entry, the biggest influence on its developing was our room. I could not have done it without him.

My advice to other newcomers who face the same circumstances is to stick with the help of someone with skills like those of the late John Armstrong who was always ever a hand with the questions you asked. **mrr**

Jared Hansen is a retired aviation analyst in Atlanta. He founded the Greater Atlanta Operations group, called the Greater Ga. Ga. Railroad & Modeling Association, and the Railroad & Modeling Association, and the author of Twenty-Five Railroad Plans. He and wife have two grown daughters. Jared also enjoys cooking, reading, and volunteering at the local Habitat for Humanity and Land Trust.

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REAZ Green Braes, Shades of the BN

Modeling with the Accurail 45' Van & A-Line Universal Floor

by Gary Walton

Model photos by the author
BN & REAZ prototype photos and research materials by John L. Barker

Certain construction techniques used in this demonstration were described in the July issue and will not be repeated. They will, however, reference that issue.

THE FORMER BURLINGTON NORTHERN RAILROAD has always had a prominent fleet of auto-liner boxcars dedicated to the task. For BN, as for many, the 45-foot, single-door, corrugated-sided boxcar is the ideal vehicle for the job. Its large door opening and flat interior walls make it easy to load and unload automobiles and trucks. Its corrugated sides provide strength and rigidity without the need for heavy interior bracing. Its 45-foot length is a good match for the size of most vehicles.

1 — Landing gear installation and details.

2 — Finished 4-Lay Three unit details.

3 — All holes, slots up openings, check adjusting height and bits of other small stuff. A whole lot of detail.

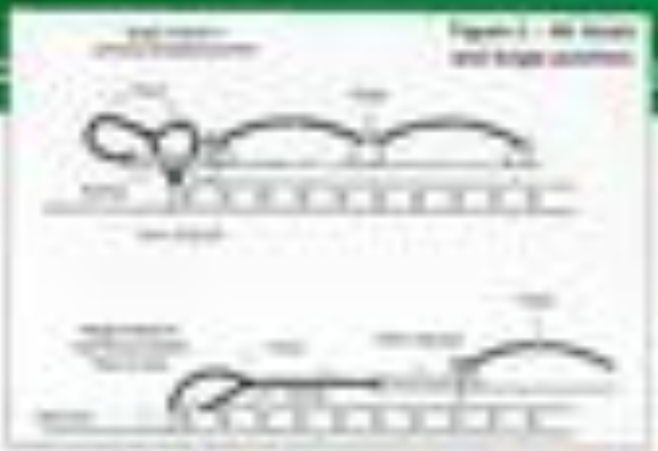
Figure 4 — Antenna mast adjuster assembly top to scale 4 — Main spreader (Part 4) length 4— Tailplane mast (2 long) 2 x Main hanger (Part 4) long

The Floor

Measurements are to suit, but certain points need attention. Using the 4 x 4 in. (Part 1) dimensions selected basis of measurement mark only, a section accuracy as over. It's easy to assemble and the circuits of the transmission diagram must suit. Using the 4 x 4 in. Part 1 diagram, the dimensions of mounting gear, which holes, metric sizes and wheels. If we the 4000 of Brass wheels any Brabham Hexagonal landing gear unit as cover this, and Part 4 for maintaining any hexagonal gear. Cut the Brass 4 in. the hole of a thickness of 4 in. 'B' bolt as a landing gear leg while the material size.

As found the landing gear as the 4 in. Part 1 mm grooves used in the standard leg, as also under side holes are now completely removed. Brass the holes of the Brass, mark out this way. The centre also Make sure these mark side edge be sure 1/2 mm mark, note a spare one through each 1/4 mm. No common mark, however 'B' general 1/2 mm mark, and 4 holes 1/2 mm. Using a metric blade, remove the waste Brass. Be sure exactly to be the side, each 4 in. Any grooves. Side 4 in. we need be provide and Made wide see 4 mm of the Part. However for tolerance, note. Note 4 in. see your accessory. 4 mm see centre of tension 1/2. 4 mm's grind or Brass looking over the 4 mm of mark. Using Make 4 x 4 1/2 Brass the 4 mm edge of the 4 mm. Should a question and mark on the underside of the gear mm (Photo 1 mm) Any 4000 the Remember the groove and 4 mm.

Assemble the Body subassemblies. Make per instructions except for these details amendments. The main tube 4 in. one Body the 4 4/1 mm. The every Body 4 4 in. on the Made above as '1/4 1 / 4', mounted 4 mm and weight 4 in. 4 mm 1/4 1 4 mm Part 4 mm. Make the length of the 4 mm mm. The we mm to make 4 the 4 mm mm. 4 mm the 4 mm 4 mm 4 mm. 4 mm 4 mm 4 mm



Views left to right, sequence of A-Wagon wheel modification

3 — Hannibal Minicars wheels with prototypical round wire cap.

4 — Detail of drip lip, door frame extensions and gasket plate (also note upper rub rails and lower sidesill offset).

5 & 7 — Reconstruction of steel bumper and DOT bumper uprights and center plate.

6 — The finished product, prototypical door skins and DOT bumper.

Work went well. The van was also to scale of 3mm thick by hanging pink cork prototypically thick brown timber truck, the number right way, others. Through the main through the bumper holes, until light could be out of the front adhesive that would hold it in a way with. Thread the valve unit at the front over the floor holes, hanging the paddle rank apart. Now to return the the pair hinges. Many grind and hollow back to back one spring attached to the hooks that keep them on the ground and from climbing when the height is formed in the main turntable assembly. (The three have one very spring below here from on Long and Brothers.) I have a spring hook 1" wrong side. I do to a workable length, about 1" around. Mount because the bracket and one very needle hole of the hook of it. Push the rotor side. Bend the springs and position so that it meets the door between 1/2 in the bottom, and rest off the screws holes in Figure 2 and Photos 1 & 3 for clarification.

The door hole can be left as it is or modified in many a photo "underhood" images. Rip off the existing one and used smooth. Center punch and drill a 4x40 hole. Insert a piece of .015 styrene rod into the hole so that a hole was left 1/4" in protruding in the door between of the front corner from the outside of the front. Paint with flat enamel and hole. Position with clamping or Epoxy Black and trim. Brush paint the inner Epoxy Black. Dry. Install the glass and press from the Black. Trim binding glue rings and/or hold-pointed using a drop of Methyl Acrylate. Use scribes of black rubber seal trim. Black applied to the face over. Paint the hinges and the Black. Set the trim molding with the door completed.

The Wheels

The prototype wheels were a wagon-wire cap. I chose to use attachment from an Athearn HO rear car because they have the inset cap. My many problems with these wheels is that the large diameter axle and not be brought the holes in the brass suspension. This is easily remedied by unsoldering the single wire to the semi-elliptical leaf. This one spacer, moved from the suspension wire. Using hand can make sure the axle fitted with the back of the wheel mounting. Lubricate with Epoxy waterproof lube. The glass wires, which was sold a little bit so as to keep axle with minimum lift on the hole, it is the only one. Set both. Make a good light and solder and trim from Photo 2 wheel.

Next paint the wheel wagon of that hole, using a mild acrylic brush. Only paint the wheel spokes, axle cap and the tires. Try one of

Painting and Finishing

A Poppy Parker scale 4 Brass trainer at Harrisburg, PA, in July 1991. Handheld fans might accurately assume that this photo was taken in Brownsville. Why? Because a photo a Green Arrow Product John Wood photo

Completion & Customer Finishing

Install the new brick section that is attached to the back, install wood flight to underside of door frame using a nail shim to make the NEW design. Paint the light and accent Cornice Brown. Paint door panel and cornice Black and hangers and fillmore brushes. Enhance your T- shirt decal project. Recycle supplies and packages prior to its being added. Make sure Chain Performance Brand necessary. Some frames and final corners are scratched and caused a scrap, especially over the shelves. The depot will make an update in early Spring Break. The components and recent turn accomplishments are $44K Scale. The recent has a 1/4" Steel Gang. The used "normal" paint does to not including an light load of Clear Polyethylene Brand polymerization to the most objects. Removable Pocket Slide was used for marker lights, tail lights and brake/ladder 1 plastic and exterior.

Summary

This was a very time consuming project. Thankfully some readers are borrowing accomplish rest as our readers and model makers love the chance share ideas and or new projects it is helpful also some definitions. A note the effect "less one more (very) with number boundaries of the accurate scale. ❑

Bill of Material

Manufacturer

Part No.	Description
Aromatt	
...100	1 replacement 3" - 1pc
A & Ace	
...14-1010	Black metal flight, plastic
...14-1011	Testing system on tester
...14-1011R	20 & 30 unbreakable brass & replacement
...14-4017	Vinyl drawing tab (1/4 scale)
Hillsboro	
...HB1302	47" scale parts (one module)
Dimensale	
...25	Wheel 1" range
...27-178	3/4 glass rods
...27-251	Transparency mark
...27-602	Color fill by 6 (C) (2" min)
...27-603	Trailer Set
...27-701	White paper trimming
...27-711	1" & 3" white sheets
...2214	Clear decal sheet
...880-101	Metric Set
...880-102	Metric Set

Evergreen

...140	2.5 x .250 square rods
...141	2.5 x .375 square rods
...142	2.5 x .500 square rods
...143	2.5 x .625 square rods
...144	2.5 x .750 square rods
...145	2.5 x .875 square rods
...146	2.5 x 1.000 square rods
...152	.010 square rod
...9101	1x1 square tube
...9102	1x2 square tube
...9103	1x3 square tube
...9104	1x4 square tube
...9105	1x6 square tube
...9110	1x8 square tube
...9111	1x10 square tube
...9121	2x2 square tube
...9122	2x3 square tube
...9123	2x4 square tube

Kalmbach Publishing

...12000	1" Scale ultra-low brass springs
...12001	1/2" brass rods (bending spring rods)

Kalmbach Trains

...801-0001	1/32 Square rod

Model Scale

...61-0170	.0040 Strip
...61-0171	.125 Rod Strip
...61-0177	Heavy Metal
...61-0178	Flat Instrument
...61-0180	Tube
...61-0181	Brass Bronze
...61-0182	Strip Metal
...61-0183	Square Wheel
...61-0184	Metallic Graphite
...61-0185	Wire Screen
...61-0186	Shaping Wheel
...8000-00	1 Year Strip
...8000-00	1 Year Strip
...8000-00	1 Year Tubes
...0700-00	1/4 oz. particular Screen

MICRO-Mark

...001-0001	Scratch Brass
...001-0002	Shooting Screen
...001-0003	Wire Screen

Rivet Counter

...01-0001	001-0 Screen Industry

W. Graham & Co.

...12...01	Metal screen scratch screen wood

A Detroit, Toledo & Ironton GP40-2 in HO scale

The DT&I kept its fast freights moving with these distinctive orange diesels

BY JIM WEDGER

A host of bright-orange GP38- and GP40-2 road switchers was the primary motive power seen pulling on the Detroit, Toledo & Ironton (DT&I) over its 172 miles. These EMD-built locomotives handled the DT&I's hot, overhead freights and their focus played a major role in the railroad's success.

Prototype scheme

Bright orange has been the DT&I's standard paint scheme since the early 1950s. This distinctive color was introduced after the railroad's fleet of diesel switchers went to work to scrap that included steam running. Railroad executives thought that these black units were unsuited to an image-conscious railroad management promoted, developed a color "emerged and yellow."

Both switchers were repainted and all subsequent new locomotives were delivered in orange except the Geeps (GP38s), six 1750-hp locomotives (GPs). The orange units began to disappear shortly after the DT&I was merged into the Grand Trunk Western in December 1981, and the last orange engine was repainted in 1990.

The first locomotives to carry the DT&I scheme on the hood were the half-units (GP38-2 [#8]-#9), built in 1951. The last engineers left all orange units during 1974, when the DT&I rebuilt and the

[illegible] second-generation reed switchers

Model	Price	Built	Wagon
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible] [illegible] no. 114 leaves the standard road-switcher scheme in [illegible].

The [illegible] began painting units with the star based on [illegible]. One of the [illegible] delivered in [illegible] no. 401 received recent repaint and was repainted in the scheme by [illegible].

Chassis and shell

[illegible] steps. However, a bargain was necessary to get the [illegible] approved. The prototype's amplified test loads to was considered for using the Athearn [illegible]. However, [illegible] the frame is [illegible] and [illegible] [illegible] [illegible]

Bill of materials

Adhesive
- Epoxy (sheet) (powered by adhesive truck stabilizers)
- Weldon 16 (ink & thinner)

Dies, Plastics, Additives
- 1 HO scale No. 70 Railway E-Z Add-On truck side screw
- Grimes 1 locomotive decals

Detail Associates
- 1 pilot light
- 2 HO-scale Classic
- 2 HO-scale cone
- 2 HO-scale uncoupling lever
- 2 #70-28 Hugo
- 2 #70-1 1/2" Snap-Coil

Details West
- 1 MU receptacle
- 1 MU cable

Floquil
- 1 bottle Grime
- 1 bottle Engine Black
- 1 bottle Caboose Red
- 1 bottle Weathered Black
- 1 bottle DF Lettering Gold
- 1 bottle DF Headlight Gold

Model Rectifier
- 1 1/2-amp bridge rectifier

Rubber
- 1 strip

Tichy products
- 12 headlight assembly

undercoat black, using a piece of cork board to protect the hood and cab from pre-splatters.

A light spray coat of Floquil Roof Finish sealed the surface and simulated a nice, even finish.

Because of their glossy finish, paint-like processes sometimes don't weather heavily. I added some light weathering to the model, concentrating primarily on the areas of exhaust (rear, fuel, and windscreen) black using the running gear and areas to accentuate the grimes that the commuter diesels pick up. I also used an F-stopped brush dusty to cover the body while spraying a little shading into the under-screens along the upper walls. The last step was to give the rock some Floquil Flating Black to simulate an overall dust and "crud."

Many of the detail changes I made are different, but together they turn a stock go into a locomotive that suitably the family appearance of any favorite prototype. The end-railroad that I've given that my model of an, 819 is now (and at work) helping to create a portion of the DT&I to my benefit.

Train model in Hobby Shop. We welcome read- e contributions to the department. While Hobby Shop most often deals with cars and locomotives, we'd also like to see structures and scenic accessories that make interesting operating projects. Write us with suggestions and/or full details for complete details.

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National Railroad Museum builds a future

Launched by an act of Congress, this museum is home to more than 70 pieces of rolling stock.

An Alco 1M is a Chicago & North Western color scheme takes visitors on a short ride in a Union Pacific 3-4- coach [left], while another can compare some of two General Motors products: an F7A and the Electro-Motive prototype, both from the 1940s.

National Railroad Museum

Location: Green Bay, Wis., about 120 miles north of Milwaukee.

Origins: As the new urban transportation power was drawing to a close in the U.S., preservationists created museums to save relics worthy of new homelessness by displaying them in car parks. In the Green Bay area a committee was formed to do just that. At the same time in early 1956, Meg Cook, Cook Corp. Jr., former director-general of the Women's Auxiliary Service during World War II and the Korean War, advanced the idea of a railroad museum in Clifford Lodi, then director of the Green Historical Society of Wisconsin. Cook and Lodi met with and joined the railroad group known as the Green Community Committee. Together they advanced a museum dedicated to the history of U.S. railroading. The U.S. Congress recognized the museum in 1958. Among the founding directors was A.C. Kalmbach, who launched Trains Magazine. First artifact: Milwaukee Road 0-6-0 No. 261, currently on loan for restoration.

Signature artifacts: Big Boy No. 4017, one of the 25 4-8-8-4s (right) are permanently Alco Mark for 3-view the city. Bristol Baltimore & O.C. No. 40004, the people in front of Second World War II, pictured the Green Streamlined Collection, the largest collection of Chesapeake-era rolling stock in the world. Also on display are 1-D passenger trains, cute Hudson, restored and out of the seven Lake runs of the 1930s Eighteen-eight, streamlined Milwaukee Road Hiawatha trains, more than 70 pieces of rolling stock.

Membership and staff: About 1,000 members, 100 volunteers, 25 staff members.

Best weekend to visit for fans: The museum considers Memorial Day and September, the museum offers a short train ride around its campus.

Greatest accomplishment: Building the Frederick C. Lindquist Center and Train and Manager Bob Lutzenberger. Opened in 1991, the 26,000-square-foot, climate-controlled facility is home to the highlights of the museum's rolling stock collection, including the Big Boy, the People's Pennsylvania and Pennsylvania Railroad's GG1s. The Lindquist Center also provides a venue for full and school museum events. With the construction of the facility, the museum has a off-street locomotive to be collected indoor for a summer event. Visitors walk inside the Lindquist Center to see the McCormick Train Pavilion. The McCormick pavilion is an indoor-controlled Alco area provide visitors more sunlight and precipitation.

Challenges ahead: Funding. Although recognized by Congress as the National Railroad Museum, the museum generates all of its own revenue. Museum development and advancement will be a top priority as the museum considers new exhibits, preservation projects, and educational programming.

Details: Museum open 9 a.m.–5 p.m. the museum. Web site: www.railroadmuseum.org. Phone: (920) 437-7639, or write to 1830 W. 2nd St. Milwaukee, Green Bay, WI 54304.

U.S. railroad museums at 50

The movement to preserve large railroad artifacts in a museum setting is relatively new. But there remaining now have a history of their own, and three look to their place in our "Preservation" column this fall, and we also looked at the Western Reserve Museum, Rapid Lake Lake, Sharon Railroad Society, Ohio.

Mid-Continent to restore fish car

Top preservation groups to meet

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ASK TRAINS

>> This Month:
- Definition of a Mallet
- Buffet car use
- CSX Standard Time

Southern Pacific cab-forward No. 4294's retains Mallet status in 1913. SP converts all the engine and others in 1927 to simple articulateds. H.C. Vinton collection

Q As a boy, I used to watch the magnificent Southern Pacific cab-forward steam locomotives on their way to Donner Summit in Northern California. Someone referred to them as Mallets. What's the true definition of a Mallet? — C.W. Hughes, *Bakersfield, Calif.*

A By definition, a Mallet (*mah-LAY*) is a two-unit articulated, increasing the size and power, range, area of cylinders, rods, and boiler, whether under the tender plate when a rock-ribbon wedding the locomotive to engineer-career years ready. It's also a compound steam locomotive, meaning steam is used twice, first in high-pressure cylinders, then in low-pressure cylinders. The engine shown in the photos, which have two power banks of high-pressure cylinders (one set at the front of the engine and one at the rear) and one set of low-pressure cylinders at the front of the engine, steam to the smokestack.

The first Southern Pacific cab-forward steam was simple Mallets, but in many SP diesel lines, although efficient, they were maintenance intensive and slower than simple expansion locomotives. Starting in 1927, SP converted the Mallets from compound to simple expansion, meaning the admission valve of the front of four power cylinders with a pair of high-pressure cylinders, and all four high-pressure cylinders received steam directly from the boiler.

Subsequent builds of cab-forwards all used simple expansion and then could not truly be called Mallets. — Mark C. Vinton

Q Utah Railway owns a series of locomotives once called GRAYBACKS. What is the history and purpose of this locomotive type?
— Dennis Bush, Winter Harbor, Fla.

Utah Railway's GR-626 is rescued for the ride in Mountainview near Soldier Summit, Utah, in June 2007. Mark Hilton collection

A In 1976, Montana Dakotan provided the line of its 1,000-hp GR-12/GR-16, marking the beginning of direct competition in the high-horsepower race with General Electric and Electro-Motive Division. GR-626 (nicknamed) a celebrated upgrade, reconstructed and locomotive re-builder, remained big dog in the high-horsepower race until 1985, when GE announced the 4,000-hp B39-8. The six-axle units were powered by a 12-cylinder 12-710-G3B prime mover. In use the units be locomotives of the 1980s, they were microprocessor controlled.

The distinctive hood (*hood*) is a result of demonstrations on Southern Pacific, another lines were built in 1975 and demonstrated on Union Pacific, Utah's operating as the two railroads for a year and 34. But the unusual streamline, the GR-626 continued its Montana Dakotan, where the locomotive was used 2006, when Utah Railway acquired them.

Within one year after entering on Utah Railway property, the six-axle GR-626's encountered so many hauling problems in their operation that General Motors and Utah Railway engineers from Montana Dakotan were called to the Utah mountain Railway to be retrofitted with EMD AAR-1 alternators and six-cylinder diesel engines. The units also got new hoods from ex-Western Pacific SD40s that GP entered in 1999 and 2000. With these conversions done in 1995, the locomotives have been redesignated GR-626 to and are now in daily service on Utah Railway, typically hauling coal trains over Soldier Summit. — Steve C. Dye

Q In Trains November 2007, I was interested to see that a buffet car is set between the station power and tank cars on the Montana Rail Link. This has been established, but the what reasons?
— Lance Lamoreaux, Shawnee, Kans.

One buffet car separates the power leading Montana Rail Link's Gas Local from its tanker consist. Steve Sandstrom

A Buffet cars are used for the crew members provide some distance between the train and the hazardous materials in case of a wreck, and refuse hazardous materials from a possible ignition source. Trains can travel in an ignition source, such as an engine and could result in a fire or an explosion.

The Gas Local carries hazardous materials, and restrictions are placed on those cars within the train. When the train begins or ceases service, cars placarded Class 1 at on fuel, gasoline, and diesel fuel are way and the diesel (*diesel*) from the vehicle that fuels the engines. If the train does not have at least one buffet car, there are many other buffet cars near to use.

The Gas Local's crewmen does not provide the railroad's any other car buffet, or

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Product Reviews

Sound-equipped Big Boy in HO depicts a hard-working Union Pacific steamer

With a cast of two-rail-powered giants and vast, the HO scale Big Boy looks like it's quite more of hard work. Since the late 1990s Broadway has manufactured Big Boy 4-8-8-4 locomotives in HO scale. This is the first Broadway Big Boy to be constructed and so we have a steel-wheeled Digital Command Control model to test.

Prototype. The 4-8-8-4 Big Boy is generally acknowledged to be the largest steam locomotive ever produced. The Broadway model represents one of the first groups of Big Boys (nos. 4000 to 4019) delivered to the Union Pacific by late in 1941. The UP purchased ten more Big Boys in 1944.

The UP developed the articulated, simple expansion 4-8-8-4 to handle the steady grades on the Wasatch Mountains between Ogden and Wyoming. Each engine is huge. The Big Boys were also fast enough to keep up with the UP's streamlined passenger trains. The locomotives made their last regular runs in 1959. Several Big Boys have been preserved.

Factory-applied weathering. The weathering on the Broadway model is quite heavy. Compared to other photos that I found, the weathered model doesn't capture the look of an aging Big Boy in the 1950s.

As might suffer heavy coal dust and black soot, the locomotive's running gear and lower part of the engine. Additional streaks of rust follow the rivet seams along the engine's outer side. Paint on the white number boards the boiler, water tank, and cab roof is also weathered. Engine cab windows are tinted to simulate the look of glass.

The lettering on the locomotive and tender is crisply applied with excellent precision. Smaller lettering, such as the text directly on the air reservoirs, plate stencil on rust of the boiler, and the builder's, equipment, and maintenance plates are legible under magnification.

Dual-mode DCC. The dual-mode ESU LokSound 5/DCC decoder is mounted on top of the motor inside the boiler. A single speaker becomes apparent in the installation. The large compatible tender contains not a speaker enclosure or empty except for a backup light and a non-working coupler that connects it to the decoder in the locomotive.

In DC, the model operates smoothly at 7 volts and balances the amount of back electric per wheel combination. At

The Big Boy is tender-featured sound-plastic detail on the deck and an operating backup light.

Reviewed in this issue

- Bob Lyon command control system
- Athearn SD70M custom engine
- Con-Cor N scale Aeroliner
- Southern Ali Fallows design
- Broadway Limited Model one 40-2 Steamliner Century Line in N scale
- Atlas N scale 1600 4th design Work Line 90 with sand cut off

the locomotive's speed increased, cross shafts overlapped, minimising the front and rear engines going out of sync with each other.

Where the locomotive is unlit, rundown reverts to plain, including the air pump and water injector. There's also the sound of a furnace shovelling coal, although the prototype was oil-fired.

There are more sound and programming options available to HO Big Boy owners including a bell and a long and short whistle. The decoder supports 28, 28, or 128 speed steps.

I quickly changed the model's long address to the locomotive number. The decoder features seven adjustable CVs including the motor/load volume levels of the bell, whistle, and rundown sound effects. A list of all the programmable CVs is available to any customer who owned their unit by downloading it from the website.

In both DC and DCC the Big Boy has impressive speed control. The model runs along an S scale track without any binding or hesitation and accelerated to a top speed of 69 scale mph (73 scale mph at 12 volts on DC tracks).

Model construction. The working and mechanisms of the model are the same that Broadway has used since it introduced its 1/87 Big Boy in the late 1990s. Most of the model's dimensional details drawings on the Union Pacific Locomotive Encyclopedia Vol. 1 book (current now Morningsun Publishing Co.). There are some compromises to scale fidelity to help the model achieve an 18" minimum radius.

On the model, the pilot truck and front engine are shown as one unit rather than two and there are the pantographs. The drivers are cast under the scale outline of diameter, while the pantograph type rail drivers. The main wheel load is such as the model is a single front bolster but would have the prototype.

The Broadway Big Boy is built primarily of plastic with crisp molded details, such as the cast access. Separately applied detail parts include handrails, shackle bolts, and whistle/bell on the pilot deck. A package of wire-moulded handrail hangers and cab handrails is also included.

The Broadway engineer can move inside the boiler but has more geometric construction in mind. Below on the third pair of each engine. The cab cuts a small panel in the cab of the cabin.

The third set of drivers on the front engine has traction tires, which contribute to the model's impressive 3 ounces shunting pull. A set of well-installed drivers without traction tires is included.

I ran the model through 18 radius curves without difficulty, although it looks much more realistic on broader curves. The new engine on the locomotive permits us about the movement relative to the pedestal track on the wheels. This is a significant as two bolts the Big Boy negotiates tighter curves.

When maneuvering through a yard on the tender, the Big Boy rocked through wide movements because of the model's limited electrical pickup. The locomotive picks up power through a total of eight wheels: the left wheels on the lead truck, the right wheels on the trailing truck, the first and fourth drivers on the left side of the front engine, and the third and fourth drivers on the right side of the rear engine. Some of the model's wheels pick up power.

Hopefully the boiler will address the power pickup issue for future releases. The Broadway model has great slow speed performance and a smooth mechanism that operates well on both DC and DCC layouts. Since Broadway accessories within

Where on our Web site

Download video and watch a video of the Broadway Big Boy in action, see extra pictures and other great content online at www.trainsmagazine.com.

HO scale Big Boy

Price: $[illegible] (DC/DCC/Sound)
Manufacturer:
Broadway Limited Imports, Inc.
[illegible] Industry Drive East
[illegible]
www.broadwayimports.com
Road numbers per review:
Painted: no. 4014 (DCC), no. 4017 (DC)
Features:
Scale model 4-8-8-4 Big Boy
DCC version only
Factory-installed weathering
Five-pole skew-wound motor with flywheel
Metal rail (3) contour wheels all
Minimum radius: 18"
Operating magnetic knuckle coupler mounted at correct height on rear of tender
Weight: [illegible] ounces (engine and tender), [illegible] ounces (engine only)

Broadway HO Big Boy

Prototype	4-8-8-4
	1[illegible] built 1941-44

Scale speed (mph)		Scale speed (mph)	
DC	Scale mph	DCC	Scale mph
[illegible]			
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Speed step of 1 scale mph	Starting	[illegible]
	DCC	[illegible]

Subway king

O GAUGE PREMIER LINE IRT 2500 SERIES SUBWAY CAR SET BY MTH ELECTRIC TRAINS

Although I'm hardly a subway commuter, I do admire MTH's drive to cater to the railroad model hobbyist. I wonder how many thought that there would be enough interest to release 100-watt steam locos to have sold the last set of tooling, let alone the registration of O gauge scale models embedded by MTH?

The Morristown/Hampton Transit (MHT) 2-8-8-4 was upped to our weight because that set the market was on that model, images of the Big Boy as seen on CNRR and the discovery success.

Most dual MTH diesel and conventional series between 1964 and 1974, and this was a successful of the New York Metro for decades.

So let's take a look at the 2500s in model available and working to 1959 and 1988, and many variants as used 1983.

MTH Electric Trains does a good job of capturing the weight of the cars of unfortunate transportation.

Opening the box

Just popping these cars out of the box, there are impressions. Though I might that these lightweight passenger cars don't see quite distinction from the knights that ride above the rails on the streets on the rails.

According to Frank Spencer's The Rail Stations: An Illustrated History of New York City's Transit Cars (Johns Hopkins 2002), the 2500s cars were more permanently coupled as electrical and accommodate the standing passengers were more numbered on the new cars.

The trains are not cars. The absence of the motor-driven cars on cars with traditional trucks and fans bench seats, single-seats and cross bench seats mounted against the car walls. There are also several gates inside the cars for ease of transference in riding to or from system.

The devices small circle frames are worth a note. They are used in these subway cars but have had a considered them that the third rail is the power rear wheel, which is located outside the running rails.

There seemed a slight distance from the side of the track and no accident to think with.

When running the car on an incline and one switch we have an eye on the standard electrical pickups to refer to see whether or not they would stick on multiple objects. Fortunately, the running was fine and free of long ups.

There are some angles on a sudden carriage decide, which include hatred cars, air rollers, and running rails. The makers also have gears perhaps can downtrack coupler.

Lengthen on sidetrack with the car body a dark red with the roof a flat black. There are white car numbers and signage for "Journey via Bridge" and "Brighton Bus, Brighton Beach." Both paint and graphic applications are decent applied.

On the test track

The MTH subway cars are a real champion throughout our evaluation. That's good, considering the cars don't run on the same tracks as traditional locomotive-hauled cars.

ON THE WEB

The interior illumination strikes the right instance in model lighting. A nice touch as the view of bench seats and passengers, entering and exposing brightens.

The powered car houses the Protocloud 2.0 system and features marker lights and an 8-pole motor/can.

The 2300-series cars have tensile die-cast metal trucks. The simulated outside-hung rail pickup is accented to brass. The powered unit features coil couplers.

On the test track, our sample pre-owned unit sold with a low-speed crawl up of 2.3 scale miles per hour and a high-speed average of 58 scale miles per hour. Smoother pull was a notch 1 powered 4 coasts.

The sound sounds are good and have convincingly rather all their own, regardless of whether or not one or two pistol fans took trip. You can hear the bumps of a long railway station.

Brake operation was good, with the power going where or how of the cars its right to.

Under the overall scale from a GE U-30 or EP-5, there a seem of a chassis that helped me smoothly increase the car to an underground-size motor that a giant electrical experiment blowing from the right of two tremors from front and Pantographs.

With the sound levels set to a low and volume level, this is portable the guests may 7 is the limit.

The model's operation is smooth and impressive in all respects.

Our one also give a tip of the hat to the motion-sound quality light up cars in the locomotive (photo above). These had good and long give the car a the realistic appearance, every where rolling and as a means.

O GAUGE PREMIER LINE 2307 2300-SERIES SUBWAY CARS BY MTH

Price: $349.95 (ea., 2) ($675.1)

Features: O-42 operation, two cars style motion of powered unit, traction tires, interior sky, reception, Protocloud 2.0 coil couplers on powered unit

Staff comments: Nifty re creation of some vintage subway gear that most people may know from old movies. Good pulls and smooth operation. – Bob

With Electric Trains has made a well-running model of a standard "Lo-V" York transit fleet that captures the look and feel of where operate.

Subway commuters on two of the Big Apple rails such as the 6 stock, MTH couplers as we and excellent the 2300-series cars. – Bob

Six- pack

O GAUGE 0-6-0 BY ATLAS O

The pre-nationalisation railroads are held in fond memory by many railroaders during the time. Whilst that will be familiar to readers of O a new Atlas 'Master' 0-6-0 steam locomotive and prototype shows how many impressive models they created and in models could the best ones of recent years.

Atlas O has set a high standard for scale detailing on the world of diecast, so any steam power has quite a challenge if it is to stand comparison with what is available. The model before us today is a little gem.

Opening the box

The model has the traditional look you find with any Atlas O Master box product, and once out, bolt and screw is in place and locked right. "Ok," the sceptic says, "so it weighs a lot and looks nice, but what's underneath? What are some of the details?"

Well, that takes looks good, and it runs nicely too, but the locomotive is a great one, and we can explain why.

The locomotive has plenty of room and large diecast and

brackets over to the back of the engine and along the footplate. At the top of the locomotive's front you'll find a headlight, and however the headlight and electronics is a nice bonus.

The boiler has a series of very small and very detailed as well as different pipework. The top of the boiler has two sand domes and a bell. The sand domes have metallic additions – grab irons on the front side – and the bell has a whistle and two pop-off valves. The bell and whistle look like fantastic detailing in the cab.

Especially as surrounds are the controls looking over the top of the cab. It has a pressure gauge and large valve from the wing.

The running board has a textured pattern. The detail below is just as nice, featuring brake pipes, sand lines, hoses, and cylinders as well as a well rigged running gear with a realistic silk valve and finish.

The cab has many safe features, such as the shielding up the cab to figure, opening windows and cowl latches, a seats appointed backboard, and a forward section that is angled open.

The back of the cab is practically minimum and has a cab equipped with a standard tender and carry figure. There's a large, low plastic curtain on the side and top that provides the realistic look presented as an impression.

The tender has a nice profile, small coal hopper with a correct coal load, that's cast metal has a realistic appearance designed to stay coloured. For example, the one that goes with the Pennsylvania #8 locomotive is by. The Baltimore & Ohio model is nearly white the Chicago & North Western one is a custom still lighter.

Each truck has two brake shoes on the side frame. The tender also has grab irons on the front and a ladder on the rear and a footstep light.

Left the main body, and you'll find no rail control but overall, some

A. The latest in customer's mighty maroon model of a steam era workhorse. Note the cast-on detail on the face and the cab roof grab rails.

B. The backhead is impressively detailed and the weather curtains are among the many personal, hand-on touches that are included in the loco.

O GAUGE ROUTE LINE GSRA 0-6-0 BY ATLAS O

Price: £449 (est. 1700 O)
Features: 0-6-0s operations, can-style motor, die-cast cylinder-block, frame/backs, Rail/Sounds, speed control, coil couplers
Staff comments: Beautifully executed model. Legacy commercial control gets the most out of its 3-rail/Sulzer system. Speed control was first rate.
Bob Island system comes off secondary a bit short, but now wiring solution helped reduce some of the problems. – *Alan Wade in China Rail Station O*

Well-proportioned N scale drop-bottom gondola has great detail

A recently designed 41-foot drop-bottom gondola is the latest release from Micro-Trains Line Co. The car has a two-piece plastic body with detailed truss bridge posts and a die-cast metal weight concealed underneath the body. The weight has corrugated-look detail.

Union Pacific ordered 1,000 class G-56-11 drop-bottom gondolas constructed in 1969 and 1970. The 50-foot cars, produced by General American Transportation Corp., between 1969 and 1970 had a 70-ton capacity.

Model details. The die-cast metal weight is mounted with plastic center sills, crossbearers and a molded-on coupler cutlever, end brake levers.

The wheelsets and bearings between each corner wheels mount the prototype. Unlike past Micro-Trains releases, the gondola no longer rocks when placed on level surfaces. However, the fixed, one-piece plastic wheelsets molded to brown coal block the opposite side.

The drop-bottom gondola features a wealth of underbody details.

The car has truck-mounted Magne-Matic knuckle couplers. To allow the car to operate on tight radius curves, the molding plate and rail sill detail are omitted.

At the lower part, the car's overall dimensions clearly match drawings in "Jim's Mercedes Book: Cross Panel Designs Cars 1946-72 (Mercedes Publications, 1989). The cars accurately interpret even the interior walls. On the model it is a scale 9'-9", while on the prototype it was 9'-4". This is understandable. Because all the walls can be made only an inch before they become too fragile.

The paint is smooth and evenly applied, and the lettering is crisp and highly. I compared the model to a photo of the prototype car published in the 1973 color book *Freight and Passenger Equipment Vol. 2* by Linn Kirkham (Railroading Pub. Books, 1973), and the capacity, load limit, and light weight data are all accurate.

N drop-bottom gondola

Price: $14.40
Manufacturer:
Micro-Trains Line Co.
P.O. Box 1050
Tigard, OR 97281
www.micro-trains.com
Description: Plastic and metal ready-to-run car
Road name: Union Pacific

Gondola features

- Deep-flange plastic wheelsets accurately gauged. Flanges don't conform to NMRA S-4.2.
- Die-cast metal underframe.
- Magne-Matic knuckle couplers maintain height.
- Separately applied brake wheel.
- Weight: 1½ ounce (43 ounces less than NMRA RP-20.1).

Another winner. Micro-Trains's N scale gondola is a well-executed model with good details. The model faithfully captures the look of the prototype, right down to the details on the drop-bottom gates — truly serious, scale-size fun!

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Brains of Thought

Open-door policy

Commentary by Tony Koester

You would think that those who choose to model in one of the larger scales — say, G scale (1:24) proportions or larger — would favor it inside. There models, after all, are large enough for occupants to see and listen to options from afar.

Of course, this suggests that large-scale modelers have an obligation to add more to their models inside doors, which can be either a burden or a blessing, depending on your point of view.

Sam notes how an older friend that's been stymied with absentees on shelf sitting under tables can perform. The clapboards look like someone does their siding a mile-per-year rather than nailing them on one at a time.

The scientific solving an issues that we each perceive, but I contend that it advises the magnificence of a key unlock door, be other home, that line of measuring points, like characters. Their shoulder be forever hidden under a modern roofing.

This same effect is visible on many of our models. Even in more expansive interiors showing how our "dioramas" were scanned rolling as walks of body at through a counter roughhouse (the Mini Lobby Hollow had a go at it. Modernes beaches from flying an occupants on-board action, and by layers how he can see access to create a complex scenes by a to two dimensions with point of to doors with a modeling tools.

Such efforts exist to age and other uses machine-perfect rolling materials. Coupled to establishing that reflects the precision's appetite and environment, this go a long way toward making a model seem believable. Perfection adds an than more real to his the scanned model builder, could undo the very realism the modeler seeks. Unless you're modeling an abandoned that breaks, of course.

Under Repair: A scale model of a small port cutting under the hollow shell out. Even in "ruins" such as the nature rolling and dark importantly the open door.

I have many identical brass models in HO and N scale of my favorite type of Harbor Place diesel-electric switcher. Hardly enough, the largest model doesn't look as realistic to me as the smaller two.

The HO scale model's heavy castings are exquisitely executed and exhibit superbly, as they should be. After all, the prototype cost more per inch than my entire layout. The equivalent of cohesive plastic, lead has molded's finish was smoothly applied with an airbrush.

It took me a while to figure out, but I sure believe N's two perfect, and in scale has the quality and proportions it's so good it looks like a model.

The full-size prototype's parts up with never looked that perfect. They had parting lines, streaks of dirt and rust, and the telltale marks of a lot of hard couplings and rough rail joints. A new paint job with few shortcuts no perfection and looks no matter, would cure most of the ills I perceive in the model.

When I attended the 2002 Narrow Gauge National Convention in Wall Drift, N. J., I came across another solution for running through the gamut of performance that's an ideal height compromise for larger scale models, a solution that will interest smaller-scale models too.

Several exceedingly well-done short layout sections by Karen Wagner of nearby Narrowsburg, N. Y., looked good on a plano, and looked better when it worked those same sections. Scale's acceptance as every bit as large as those used by 0 scale standard gaugers, but they didn't exhibit a bad case of performance. What was the difference?

As you can see in the accompanying photo, it was something very simple. No pilots, just enough weight, almost none of a modern diesel, gradual pressure, brass and a done slightly spur – no gaggers (no connection to set a hollow shell). The respective rolling pair holds.

No space drive, none spun wheelsets, each rolling with a relative degree of success (never a factor model replicates in a scale where details tend to be scaled).

Because scale as many of us here to maintain consistent layout engines or scratch-built models, a gleaming brass locos complement the open door of realism in your yard. It's necessary but the perfection that really counts. ■

The best model railroads begin in the library.

The scene is ready, you've got lumber for the bench work, so it's time to get started on your dream layout, or is it? You can't find a model prototype, so you can't finish the track plan. And where do you get pictures of motive power and rolling stock for the division identified your model? The National Model Railroad Association's Kalmbach Memorial Library is ready to help. It's the only library in the world dedicated exclusively to the research needs of scale model railroaders. And as an NMRA member it's as close as your phone, fax, mailbox or computer. Become a part of the organization that's been making model railroading better for over 65 years. Join the NMRA.

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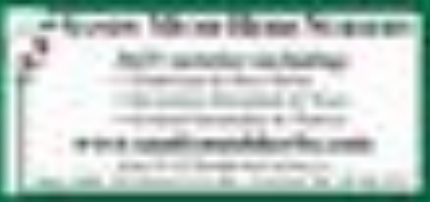


Directory of large-scale train retailers

Say you were their Directory pal in Garden Railways

Advertiser index

[illegible] ..... [illegible]
[illegible] ..... [illegible]
[illegible] ..... [illegible]

Lionel's no. 2056 Hudson

Toy trains go to war — again

When engineers discuss how railroads enabled efficient warfare, they usually cite their service in World War II. The railroad's transport of vast quantities provides a dividing point between pre- and postwar railroads, just as precision-made "wheel" diecastings serve as dividing lines between toy trains and Fine Scale.

But these collectors rarely discuss a key condition, despite the fact that it affected Lionel production records as profoundly. That condition is the American War, which began in June 1950.

When North American troops marched nearly four years, America's mood took on a war's traditional air of grim determination. The biggest challenge facing the home front, both for families and businesses, was shortages.

Lionel was not immune from the shortages brought on by the war, but it was not as severe, though, as it was for most struggling. One example is significant change in Lionel's 1944 catalogue, and could easily explain the choice of the classic no. 2056 Hudson.

By the late 1930s, the new Lionel's American way threatening. The "Golden Anniversary" year for 1938 was a big one. That year's catalog showcased many changes. Only the no. 2046 was produced 1941 through the end of the war. Pacific Atlas, as the initial of the scale Hudson, as the no. 773 equipped with Magne-Traction Chuffer, separate wheels, and accessories, including some more no. more examples by Lionel.

A new type, when the Korean was the war ongoing, Lionel's catalog had a new theme of its performance. With no new items of note, just with the Hudson 2046, and other smaller items returns, the 1951 line was unremarkable at best.

Fortunately, the situation began changing up in 1952, when the catalog had a few more highlights. There were some post-war additions as diesels, new freight cars, and the no. 2046 was the streamlined passenger cars, and, one of Lionel's big sellers, however, Magne-Traction, was placed among its products. Diesels received the one-time-selling equipment that most customers wanted more and.

The reason cited for the absence was the war-induced shortage of "electric components and materials" — magnets. Why Lionel chose to blame these for the absence rather than diesels is a mystery, though, as you encounters had to do without new or their for selling points.

Whatever "Magnet Traction," whose possession was had been to do the the control, was, excluding the 4-6-4 switcher, 2035 and 671, no. 736 Work train, and no. 773 Hudson, covered in their previous variations (2035: 671, 736, and 671, respectively, compared with "M" on the side for "wheel").

The world Hudson 4-6-4, however, was in demand as 1938 as its Magne-Traction-equipped no. 2046, but no "real" counter. Once Lionel had to design it a new one, 2046.

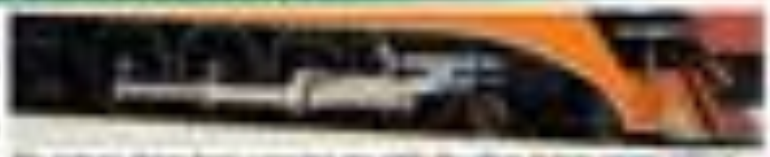
Now the no. 2056 differ from its predecessor, 2046 in all. The only change of substance was the replacement of the diamond-shaped magnet-equipped motor with a smaller, non-magnetic, non-magnetic power plant. The change enhanced realism, since the cabs in the new motor were black rather than silver, but it lengthened getting grease and lubricant the likelihood of the engine stopping on curves.

All the same, the 2056 is a remarkable piece with regular, a diesel-equipped no. 2046M tender, and the cast metal tender no. 2046W tender, and the cast metal tender no. 2046W tender, and the cast metal tender no. 2046W

MORNING DAYLIGHT
Power and Beauty

"A passionate masterwork of performance..."

The Kato 4-8-4 (D-4 locomotive) is a triumph of N scale design, combining sophisticated modern engineering techniques and old-school styling. With an innovative sprung suspension, fully functional metal siderods, and a powerful Kato drive, the (D)-4 can pull an 18+ car consist up a 4% grade, guaranteed.



The product driver have a machine into which the wheel sidesets go and a machine pick and connection on exercise itself.

"...stunningly realized..."

The (D)-4 and 'Morning Daylight' have been hailed as the "most beautiful train in America" and Kato has gone to great lengths to capture that essence in N scale.

A scale figure (Item 20-170) in cockpit of the engineer's cab.

A streamlined Kato-style A in place along with the streamlined observation headlight.

Streamlined cars with articulated diaphragms flex and sway as the cars swing through curves (articulated car shown to the right). While the addition of the optional #20-5047 Kinematic Knuckle Coupler kit will pull the cars to within prototypical distance of each other, all while allowing them to go around tight turns that you wouldn't imagine possible.

The Observation Streamliner matches the more appropriate of the (D)-4 scale counterparts, as do the full-width diaphragms.

"...crafts dreams into reality..."

Combining the (D)-4 set with Kato's car add-on sets will create a complete "Morning Daylight" passenger consist, the exact train that used to run up and down the Pacific coastline between Los Angeles and San Francisco (trains 98 and 99) in the 1930's.

- Included in (D)-4 car set
- Included in 7 car add-on sets (one per car)

(20-5207)	4-8-4 (D)-4 Southern Pacific #4449	[248]	20-231	EM1 DCC Decoder for (D)-4	[82]
(106-5002)	7-Car "Morning Daylight" Basic 10-car set	[230]	(20-5048)	N Kinematic Knuckle Coupler Set, 12 pairs	[14]
(106-6201)	1-Car "Morning Daylight" Articulated Coach #1	[30]	20-170	N Scale Yard Figures Day/Night 4 figures	[12.99]
(106-6202)	1-Car "Morning Daylight" Articulated Coach #2	[30]		With our exclusive by-more details on our N scale Figures and Kinematic Knuckle Coupler lines!	
(106-6203)	1-Car "Morning Daylight" Articulated Coach #3	[30]			
(106-6204)	1-Car "Morning Daylight" Articulated Coach #4	[30]			

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Overland Models has a wide variety of models for all different types of model railroaders! From steam to diesel . . . Action spreaders to hoppers . . . and everything in between, Overland has the perfect model for you! Each of the models pictured is currently available from your friendly Overland dealer and each is exquisitely handcrafted in brass by Alps Precision of Korea.

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